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parately; Sykes's Local Records, 1833, ii. 85-6; Davenport's Life, Writings and Principles of T. Spence, 1836; Hyndman's Nationalization of the Land in 1775 and 1882; Gent. Mag. September 1814 p. 300, March 1815 p. 286.] H. R. T.

SPENCE, WILLIAM (1783-1860), entomologist, was born at Hull in 1783, and passed his early life in business there. At ten years old he interested himself in botany. In early life he also studied economic subjects; he strongly supported the old corn laws, and was subsequently an opponent of James Mill. He upheld the view that the prosperity derived from agriculture was inherently superior to that derived from trade and commerce (cf. *Notes and Queries*, 3rd ser. v. 214; *Pantheon of the Age*, iii. 434).

In 1805 his attention was turned to entomology, especially the study of the coleoptera. He shortly after became acquainted with William Kirby [q. v.], and a friendship began which was terminated only by the latter's death in 1850.

In 1808 the two friends agreed to begin their 'Introduction to Entomology,' of which the first volume appeared in 1815, and the fourth and last in 1826 (7th edit. 1856). Spence passed four or five months in the summer of 1812 in London, making researches, principally in the library of Sir Joseph Banks [q. v.]. In 1815, after the battle of Waterloo, he made a four months' tour on the continent.

Between 1818 and 1826 he resided at Exmouth, and from 1826 to 1830 he travelled in Italy and Switzerland. He revisited Italy in 1843. Meanwhile he had settled in London, and assisted in 1833 in the formation of the Entomological Society of London, of which he and Kirby were elected sole British honorary members. He was president of the society in 1847. He was elected a fellow of the Linnean Society in 1806 and of the Royal Society in 1834, and served on their respective councils. He died at his residence in Lower Seymour Street, London, on 6 Jan. 1860.

Besides his joint work with Kirby, Spence was author of: 1. 'Radical Cause of the ... Distresses of the West India Planters,' 8vo, London, 1807; 2nd edit. 1808. 2. 'Britain independent of Commerce,' 8vo, London, 1807, which went through four editions in that year, and was severely censured by M'Culloch. 3. 'Agriculture the Source of Britain's Wealth,' 8vo, London, 1808. 4. 'Observations on the Disease in Turnips termed ... Fingers and Toes,' 8vo, Hull, 1812. 5. 'The Objections against the Corn Bill refuted,' 8vo, London, 1815; 4th edit. the same year. Nos. 2, 3, and 5, with a speech

on East India trade, were printed together in 'Tracts on Political Economy' in 1822.

He also contributed some twenty papers, chiefly on entomological subjects, to scientific journals between 1815 and 1853.

A portrait engraved by W. Riddon from a painting by John James Masquerier [q. v.] is in the possession of the Linnean Society.

[Proc. Entom. Soc. London, new ser. v. 92; Proc. Roy. Soc. xi. obit. p. xxx; Freeman's Life of Kirby, chap. xv.; Gent. Mag. 1860, i. 631.]

B. B. W.

SPENCER. [See also DESPENSER and SPENSER.]

SPENCER, AUBREY GEORGE (1795-1872), first bishop of Newfoundland, born on 8 Feb. 1795, was son of William Robert Spencer [q. v.]. His brother was George Trevor Spencer [q. v.], bishop of Madras. He matriculated from Magdalen Hall, Oxford, on 28 March 1817, but did not graduate. After being ordained Spencer went out to the Bermudas, of which in 1824 he was appointed archdeacon.

In 1839, when Newfoundland was constituted a separate diocese, with the Bermudas under its care, Spencer was appointed bishop of Newfoundland, returning to England for consecration; during his visit he was created D.D. of Oxford University. He began the organisation of his diocese and founded the Theological College, and laid the first stone of the cathedral of St. John's, besides helping to found twenty other churches. But his health could not long endure the severe winters of Newfoundland, and on 28 Nov. 1843 he was translated to Jamaica, which included British Honduras and the Bahamas. Here he found a more congenial home, though a good deal of travelling was necessary. In October 1848 he made a visitation of the Bahamas and went to Havannah some years later. He remained in Jamaica till 1856, when failing health compelled him to appoint a coadjutor. Returning to England, he settled at Torquay, where he died on 24 Feb. 1872. Spencer married, on 14 July 1822, Eliza, daughter of John Musson, and left three daughters.

Spencer was the author of 'Sermons on Various Subjects' (1827), 'The Mourner Comforted' (1845), and a number of fugitive poems, some of which appeared in 'Blackwood's Magazine' (e.g. October 1837, p. 555).

[Times, 27 Feb. 1872; Burke's Peerage, s.v. 'Marlborough'; Memoir of Edward Feild, 1877, pp. 28, 189; Foster's Alumni Oxon. 1715-1886; International Magazine, January 1851, pp. 157-159; Bonnycastle's Newfoundland in 1842, ii. 99.]

C. A. H.

1
England, Newfoundland,

25. August 1819 -

His first letter as businessman.

My dear Bette,

Behold me at last settled in my
transatlantic care, very solitary, but not very
unhappy - Had my appointment been to St Johns.
the capital, I should indeed have liked it
better; not only because then I had some
literary society, but because I do flatter
myself I should have been more usefully
employed - The point of enrolment for them
is no comparison; for the number of St
Johns, about two thousand, offered, if by

any means, an exchange with his former
Minister could be effected, & both their
subscriptions, and the crowded congregations that
attended the Church when we I preached there,
held out to me a formidable prospect of at
least being heard - At the same time, the
ministry of Mr. Wm. would have been a very
arduous undertaking for so young and inexperienced
a divine; not merely on account of its numerous
parochial duties, but because the Church has
a host of enemies to contend with, in Catholics,
Unitarians, and Sceptics - There is an ample
field for two clergymen, and they should be
men of much piety and ability, or they will
do more than nothing for the cause -
You have heard, I dare say, of the calamities
fire which broke out at Mr. Wm.'s on the

night of the 19th ultimo - It commenced its
winous career, in an uninhabited building adjoining
the room in which I was sleeping - I was therefore
the first person that discovered it, but too late
to do any further good than saving the property
and perhaps the persons of my host's family -
For my own part I lost every thing I had in the
house, my own being the first to quit the fire
communicated - The accompanying pamphlet contains
a discourse, preached on the succeeding Sunday,
which is not I, but the Public printed; and that in ^{consequence}
must apologize for all its defects -

I hope by this time all the little oppositions in
your parish are quieted, and that you are
comfortable & happy, but I will not be hear of
your being in possession of a living more mixed
to your merits - Would to Heaven I had one
of any sort in dear, dear England; there, it

is my fervent prayer, with the excellent expression,
"saltem mihi de his in sacris literis tranquille
conversescere!" Then, it is my hope once more
to embrace my friends, and to lay my bones
among them. I have an indistinct dread of the
severity of these winters; you know my chest is
not very strong, and with the exertions I have
been lately obliged to make; I have suffered
from it a great deal - I have no companions
here but my books, and I fear they will in this
respect do me no good - God bless you, my
dear Mother, and when you can write to me,
send your love & be forwarded from here -
Hart & Robinson, Beckett's, Cornhill, London -

Your very sincere Friend,

Albany Spencer

Remember me to all my old acquaintances at P.

St Johns

2^d November 1849

I thank you very nicely my
 dear Willi, for your most
 welcome letter - almost any
 communication from his old
 country must indeed be
 acceptable to "the wanderer
 on a foreign strand", but believe
 me a letter from you will
 ever give me the greatest
 pleasure - I am at present
 on a visit to Mr John's place, and
 my work for the coming winter,
 which already begins to mount
 upon me - If I can be &

For my health, it will however
be a lesson of some interest to
me, and I understand the
most savage descriptions of
Hompson's wake are beggared
by the violent appearances
and feelings of this intolerable
crime - The accompanying
epistle was written long ago,
as you will perceive by its date,
but I have felt, and unprofitably,
as it may seem to you, I will
send it - In my paper, rather
I persuaded Capt Rowley, the
most goodnatured man I ever

encouraged) & back at p
Michaels' and remain here
a week, while I took a tour
of the Island - The scenery is
certainly highly romantic, but
I was much disappointed with
the Tunnas or Hot Wells, which
had been described to me, as
surpassing the Springs in Ireland -
and to add to my disappointment
my poor dog, given me by Lady
Pembroke Lamb, perished in one
of the boiling Springs, ^{at which} the
poor animal, worried with a
long journey, plunged & upset
himself - You may conceive
my horror at the unpardonable

would yield in the agonies
of his pining & wakening death !!!
I shall in a few days, return to
my melancholy home, where I
must remain six months or more,
without any possibility of communication
with the rest of the world —
a fine opportunity for study
and contemplation, if the severity
of the winter does not quite
"freeze the genial current of the
soul." First, after this winter has
passed away, with you a full
account of the country, climate
state of religion &c. &c. but from
the little experience I have had, it
becomes me to speak with caution.
Should I in the course of my

Poster, the handmaid
of Religion

Memo. his college house poems

Farmyard, Newfoundland,

15th December 1879 -

Oct. 24

My dear Belli;

The last vessel which will leave the
coast this year, is preparing to sail hence to home,
and will leave me immured in this post-boreal
country, without possibility of escape for the
winter. Society here I have none - none but men
who do not appear to have an idea beyond their
fired and oil, with which the air of the country
and the conversation of its inhabitants seem to
be equally impregnated - Books there are my only
resource, and in that sort of communion with
the sages and bards of other days, and in the
exercise of my professional duties, I strive to lose
the recollection of my immediate sorrows -

Indeed, my dear Friend, when I reflect, that however
blest a man may be with all the goods of this
life, "linguenda tellus, et domus, et placens uxor!"
I in some measure cease to regret that I have none
of these; but at times, in spite of all philosophy,
all religion, fond remembrances and fond hopes of
the earth earthly" will occur, and make me abominably
miserable and anxious for the future -

As for poetry, I have not indited a line since
my landing on the Island - The Muse whose advocate
and eulogist I have so often been, the Muse, whose
blessing I have experienced under many and trying
misfortunes, the Muse, notwithstanding all that
Prosperus has said on her fecundity, or rather
her power of fecundity in this demi-barbarous land,
has already felt the chilling influence of the
frozen zone - And yet I know not why I should
relinquish an art which, while it conduces so
materially to my amusement, detracts not from

"The one thing needful," but on the contrary enhances every
right feeling of the polished, and the enlightened, and
the dignified, and the aspiring Christian - It will be
evident when I ascribe these attributes to Poetry, I do
not mean to recognize by that sacred term, either an
ear for the jingle, or a talent for the composition of
mere rhymes - Far from me be such profanation! A man
may write ten thousand octo-syllabic or any other
syllabic lines, and these, as they each contain the same
number of feet, and terminate uniformly with
similar sounding words, he may dignify with the
name of verse; - while they bear no more affinity
to real poetry, than the crowing of the cock in Hamlet
does to the princely, the contemplative, the high minded
the poetical character of Hamlet himself, or than
the person who played the cock, did to the
admirable Garrick, the inimitable representation of the
Royal Dane - On the other hand, I believe a man
may live and die for four score years as a complete

poet in mind, without having penned a couplet, or
sung an ode, or whined a sonnet during the whole of
that period. It is a difficult task to define Poetry -
I apprehend it is an intensity of feeling, and a keener
of perception, which exalts us to feel and see all
that is soft and sweet, or majestic and sublime, in
nature and humanity. It is a high and holy power,
which exalts and invigorates every faculty it influences,
and every object it dwells upon. It presents to us a
mighty telescope, which, magnifying the perfections,
mellowes the defects of things seen through it: but it
combines with this another and a grander quality -
it develops, if I may be allowed the expression, the very
soul of all that passes in review before it -
For instance, through the medium of this glass we look
upon some silly flower, and it straightway lives with
a kind of moral as well as vegetable existence - It
assumes new colours, new splendors, new attributes - Poetry
has given it animation, and intelligence, and
utterance - It breathes of love and friendship -

It talks to you of life, and death, and immortality -
Its frail and fragile stem, its fragrance and its
bloom seem to share with us the kindness and protection
of the universal Lord - His voice implanted it; his
dew cherished it - his sun brought it to perfection -

"The footsteps of the Violet's deep blue eyes

Keep'd by the breath of Heaven now contain'd by its skies -"

Through the medium of this glass we look upon the face
of beauty - and we perceive or fondly imagine we
perceive, not the mere lines and lineaments of grace,
not the mere charms which the Grecian chisel or the
Italian pencil could have traced, but the attractions,
and loveliness and all-eloquent portraiture of moral
and intellectual endowments - Nor is Poetry the handmaid
of Love alone, she is perhaps more intimately connected
with Religion - Through the medium of her glass
again we look upon the skies, on the wonders of the
starry universe, and we feel with the raptures of
David,

"When I consider the heavens, the work of thy fingers,
the moon and stars which thou hast ordained -
What is man, that thou art mindful of him,
or the son of man that thou visitest him?"

The same taste, the same sense of poetical beauty, leads
us in union with Religion to perceive, with the same
Imperial Bard, the inextinguishable sweetness of that
imagery with which God has gifted and adorned
creation - To recline with him in "the green pastures",
to listen with him to the melody of the running stream,
to "the murmurs of the waters of comfort" - "to walk
with him through the valley of the shadow of death,
having no evil" - to admire, with him, the harmony,
and the splendor, and the benignity of divinity, - "to
dwell", with him, "in the Temple of the Lord for ever".
Thus Poetry surely neither militates with Religion,
nor is content to remain neutral - she is her
active and efficient ally - we may read the
written Word of God without being poets, - we may

acknowledge the supremacy and do the bidding of that
word without being poets - but admitting this, as
I do to its fullest extent, will not poetical taste
contribute - not essentially, but materially to the
immediate pleasures of Religion? will it detract
from her solemnity, her efficacy, her saving faith,
& be able to withhold, as a matter of taste, the incomparable
beauties of her inspired writers? or rather will not
the allurements of Poetry, lead us often to the poetry
of the Bible? will she not chain us down in
brassclasp admiration to the glowing pages of the Prophets,
to the pure but bright magnificence of the Book of
Job, to the dark sublimity of the Psalms? will she
not, by uniting the gratifications of genius, with those
of morality, the pleasures of an intellectual with
the exquisite enjoyments of a spiritual banquet, so
intimate and blend together the character of the
Poet and the Christian, that all the feeling and
energy of the one may be brought to illustrate
and strengthen the faith and practice of the other?

Now if Poetry can accomplish all or any part of this,
and that she can, I trust you will bear me witness,
howsoever enthusiastic some may think me, I maintain
it is a task which it would be cruelly and
impolitic, and almost impiety to attempt.

How I have been betrayed into this long dissertation I
am sure I know not, but I hope in consideration of
that taciturnity of tongue to which I am at present
condemned. Perhaps indeed I close to weary it with
pish and oil / you will pardon my loquacity of
pen -

When the winter is at an end, I will
write to you again, till then adieu! and believe
me my dear Betty,

Your very sincere Friend,

Henry Spencer

mission to of the last service & this glorious cause,
should I succeed in turning one heart of the disbelievers
& the wisdom of the just, I shall be more than
repaid for every toil and privation I must
necessarily undergo - God bless you my dear Friend,
and believe me ever very sincerely yours,
Albany

With my kindest regards and thanks to
Miss Bullock, and present her with the accompanying
sum - When you write direct to me under cover
to Messrs Hart & Robinson, Long Hill, as I mentioned
in my last letter - and with Jerry Land instead
of Mackinac -

The Rev^d

Chas. Francis Belli. &c

Vicarage

Prithwell —

Longland, New South Wales
7th July 1880 -

My dear Betti;

There is in life no other positive
pleasure than that of receiving kind letters
from the distant and the loved. We must
admit that sweet though solitary gratification
to counterbalance a world of miseries - What,
though for many months I have lived in
a state of excommunication from all the
best enjoyments of existence; - what, though
I have been excluded from those high
pleasures which both warm and ablige

recognize in the social intercourse of man with
man - shall I accuse that fate of cruelty,
or that Providence of injustice - which has
left me the fond affection of my parents and
the friendship of such friends as you? with
your kind and sensitive correspondence before me
I will not - can not be an orphan -

I spent a few weeks at St. John's in the
Spring, and was received and entertained there
with unexampled - I may say, with increasing
attention and hospitality - My principal friend
however, Mr. Brooks has lately left the country
and taken with her four lovely daughters
of whom I can only say

that they are good as they are fair
None - none on earth above them;
as pure in thought as angels are,
To know them, is to love them.

I kept him with me all the last year and
did what I could to fit him for a better school.

Among my pleasant acquaintances in Newfoundland
I must not omit to mention Mr Foster, the Chief Justice
of the Island - A man truly integrity with sublimity
James, of lively fancy, of uncommon conversational
talent; - an elegant scholar, and a forth gentleman,
he can not fail of pleasing all whom he converses
with his courtesies, and of proving an entertaining
and instructive companion - But unceasingly with
all these qualifications he has imbibed and
endeavours to disseminate such erroneous notions
of government and religion, that I cannot
help wishing his eloquence had been left silent
or his judgment brought away - Instantly as
we are together, when can I resist the temptation, or
me above devote the part of containing a

lost of socialism and democratic principles, which
he clothes in such brilliant apparel, and puts
~~the~~ forth with such a facile facility of speech,
energy of sentiment, and jesuitical sophistry
of argument - that he inevitably succeeds in
triumphing over one whom he is unable
to convince - Were it not a sin to boast, I should,
however, glory in having not least unsettled
some of his scintillating opinions, and in having
moderated a little his unpatience or Russianism -
He has been a treasure to me in point of literature
and as we both ardently believe - Legitimus
facient pectora pura proceres - I trust we may both
ultimately be found in the same fold and
under the same Shepherd - I do not intend
to fatigue your patience at present with one
of my long-winded epistles to which I owe

might have applied his description of the Alexandria
time - and yet I have much to say to you -
would to Heaven I could say it personally!

At all events, I must not omit to thank you
for your indulgent criticism on my second -
and to sympathize with you for the disasters
derivation of your personal business - The
illiberality, the ingratiation of your parishioners
is really worse than I could have conceived -

"For gold his sword the hoarding squire draws,

For gold the hoarding Judge perverts the laws."

and for gold I truly believe there is scarcely
any meaner to which the majority of this
avaricious world will not descend -

You say all the world is dying for love of Scott's
Rebecca - the love of Jerry Thomas and worlds
could not make up my sum - She is by
far the fairest creation of her Mother's

beauty - making pencil - her generosity, her courtesy,
her purity, and even her love delicately as it is
brushed upon, are perfectly inimitable - and as
for her eloquence, talk of Burke, talk of Lomon,
talk of Cicero or Roches, or Seneca - but there
is nothing in any one, or in all of these writers
together, that will stand a moment's comparison
with the sweet, the dignified, the soul-rending
the God-inspired language in which this
Angel of Judah dismisses the last offer of
Priar de Bois Guilbert - Never, so never in all
my reading of fictitious characters, did I become
so deeply interested as in her destiny. The
character of the Templar is drawn with a
masterly hand - The death of such a man
occasioned suddenly by the violence of conflicting
passions, though uncommon is by no means
unusual - It is of a piece with his life, and

it was a catastrophe which I was fully prepared
to expect - "Gomhoo" has none more considerable
merit in being, as far as we can judge, a
faithful portrait of the manners of a very
interesting age - in giving us details and family
sketches which escape the historian, but which
afford a beautiful illustration to history -
And now my dear friend, again fare well! and if
you are not troubled with these repeated doubts
upon your stock of patience, you shall shortly
hear again from him, who, though distant, is
very sincerely and affectionately yours

Amos Emerson

I did not mean any allusion to the passage in the Book
of Kings - excepting in expoeia - I meant to say
that monarchs or riches - which Plato calls "εὐνομία
θεοῦ", or mundane riches, were but gods of the lowest
and most inconsiderable parts of the earth - viz. the
villages, and not of the hills - The fact is I liked the
expoeia in Kings, but perhaps I have introduced it coarctedly -
but you must attribute it to the book in which I wrote -

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GREENOCK
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The Rev.

Mrs. Anne Bell

Millwell Village

Rockport

Spex-

3/9

13-0-4



May I char be you with my best wishes and
kindest regards to our friends at Millwell &

Trinity, New Bedford
24th July, 1821 -

My dear Betti,

Your long-expected letter of the 24th
hath only come to me yesterday, but its
rich cargo compensated for the tardiness of
its voyage - I never hear, write, or think of
you, without lamenting the unfortunate destiny
that banishes me so far from the pleasures
of your society, but, perhaps, the very extent
of the distance between us gives additional zest
to the enjoyment of correspondence - I must
indeed bow all my sensibility, all my sympathy
with man, before your joys and feelings
can cease to interest me - every species of communion

I have had with you has tended to enhance my
admiration of your character, and of consequence
to create that high order of esteem which gives
to friendship, as honor, a dignity, and a stability
which no attributes, simply brilliant, can bestow -

"Socrates, thou art not as just a man

As I am my conversation could withal."

I shall not apologize for praise which the
occasions justifies, but what will you say to its
being propensity of rebuke and censure - a blessing
as you are by Providence with natural and
extrinsic endowments, why will you repine at
his dispensations? Surely, if any human being
possess the materials of happiness you are
that man. You have health, without which
intellectual vigor is often a suicide; you have
competence without which few men can be honest
and none can be happy; you have a conscience

which, abstracting from the immediate frailty
of nature, can boast itself "nil conuicti, nulla
patere culpa"; you have an imagination vivid
and active, capable of inventing those sunny Kingdoms
the Angel-visitants of a poetic mind, and
a taste delicately sensible to sublimity and
beauty - To these recollections, which are no
"shadows & grief", but substances to glad your
heart, I would add the last which the
Whisper of a kindly voice tells me, I mean a
sedate and sovereign reason, which tempers and
controls the whole - If these don't kill your
diffidence, she is immortal - Go, then, my
dear Betty, strong in your integrity, strong in
the weight of character, strong in the consciousness
of power, to your new vocation - and let the
Opposition you may meet with only increase

your faculties and stimulate your exertion - You are
yet too young to be permitted the quiet enjoyment
of the sunset of life - your noon-day shades
are not yet purged; you have not even
yet attained the manhood of your intellect,
and remember, as this broad ocean now rolling
before my windows, is kept from putrefaction
by the storms which irritate it, so must the
human mind be preserved in its vigor and
vivacity by occasional agitation - Forgive me
this digression - I know that it is the sick
prescribing to the physician, but I cannot always
control the presumption of an intrepid mind
which by tracing its own diseases to their original,
may prevent in others the ills which it cannot
cure in itself - By the bye, I must not
omit to thank you for your counsel, and
though your friendly partiality attaches

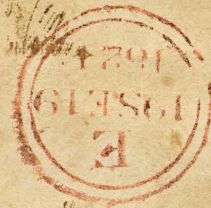
to much importance to my poor abilities, yet
I trust in every situation to remember your advice,
and the responsibility which the possession of
a title of a talent must involve -

If after all these efforts at philosophy I dares
to complain of my own misfortunes, I should
tell you that my constitution is sadly shattered
by this cold climate and by the laborious duties
incident to the life of a conscientious missionary -
Hobbes I am the only clergyman that ever founded,
- certainly the only one that ever personally attended,
a charity school in this Island - but having
begun a work of decided utility I thought
it incumbent on me to persevere, and this
duty alone costs me three hours of every day -
I should tell you that my spirit is almost
broken with unyielded expectation and

viewing disappointment. I should tell you - but
no, this is unmanly - un-Christian, I will
not tell you of sorrows which you can not
alleviate by participation - One thing, however
I must mention, despairing of procurement at
home, and finding it necessary for the
preservation of my life to quit this inhospitable
clime and unocial country, I have applied
to the Bishop of London, and to the Society, for
an appointment at Bermuda - If my
application meets with the success which, from
its obvious tendency to promote the Gospel, it
deserves, I shall pay a parting visit to
England before I go to ~~Berm~~ "The sacred
Bermoothes care" - perhaps for ever - At
all events, successful or not successful,

I return to England at the expiration of this
year - I could almost quarrel with you for
that part of your letter which impeaches the
strength of my memory - The fogs are ~~quite~~ heavy
on me, but the star of Pitt Rivers glimmers
through the gloom of Lenoxland - Your very lovely
Lady is now to me only as the recollection of
a very lovely dream, one of those delightful
visions which often make me, like Caliban,
"cry to sleep again" - Thank you for much more
than set down on my paper & say much about
it or my other readings, but I perfectly coincide
with you in admiring the reply of Nature to
our God's declaration of his eternal existence, and
the rock of our Maker's glory - The allusion
to Daniel's Lament among the Lions, and the
introduction of the Catholic, the Universal Amen,
is the very summit of sublimity - I hope you have
more room in your heart than I in this letter for

SHREVEPORT
LA



W. B. A.
The Hon. Mr. A. B. C.
Pittsburg, Kansas
Rockford
Ipsa -

2/11

The name of your attachment is
William B. A.

RE

E. S. Eliza Munson, d. of John Munson
m. 1822. to Aubrey P. Spence

Aubrey George Spence - Bishop of Jamaica, the
eldest son of the Rev. Mr. Spence was
born on the 12th Feb^r 1795. in Canon Street.
he received the first rudiments of education
in the Abbey School of St. Albans, from thence
he was removed to Dr. Burney's at Greenwich.

When the Bishop's Collegiate Course at Rugby
was over, he received ordination from the University
Dr. Bathurst, the Lord Bishop of Norwich, his
first curacy was in Norfolk, and in 1819
he accepted a mission in Newfoundland, in
this arduous undertaking, he worked zealously
for two years, when he was threatened with
consumption, and recommended to try the
Climate of Bermuda. On his arrival there
he was presented to a living by the Rev. Genl.
Sir M. Lumley, then Governor of the Islands, who
also nominated him to a seat in Council - his
Spence's first attention was directed to the
improvement of Schools, alike for the white and
coloured population of Bermuda, and his
subsequent appointment as Archdeacon, by
the excellent Bishop of Nova Scotia, in whose
diocese Bermuda was, enabled him to
carry out his plans of preparation for the

approaching crisis of negro Emancipation with
energy and success. The eventful 1st of August
1834 gave to the Slave entire freedom, the
system of Apprenticeship having been rejected
by the Merchants, and the freedmen,
prepared by the labors of their Teachers, and
the exhortations of their Pastors, received the
gift with a subdued and grateful joy, which
winced itself in their strenuous efforts to aid
with their free labour in the erection of Chapel
School houses, which the munificence of the
Society for the Propagation of the Gospel had
enabled the Archdeacon to commence. The
confidence of all Chapels in the Diocese
was yielded to the Archdeacon, and he
received acknowledgments of his past services
in the important cause of Education from
the Home Government -

In 1839, it was judged expedient
to divide the Diocese of Nova Scotia by merging
the Archdeaconries of Newfoundland & Bermuda
into a Bishopric, and Archdeacon Spencer
was consecrated at Lambeth Palace on the 4th of
August 1839, on a salary of 1200. a year. In September
he received a deputation from the Newfoundland
School Society, who placed under his direction
their Schools - in the beginning of October, the
Bishop returned to Bermuda, and from thence

in the Spring following, he embarked for Newfound-
land ^{at 11 o'clock} on Whit Sunday, ^{in the same church} the anniversary of
the festival on which he had preached his first
Sermon as a missionary 19 years before. The
summer months were devoted to visitations, & the
pressing need of a Cathedral Church induced the
Bishop to send his Chaplain the Rev. J. Briggs to
England for the purpose of collecting funds for
building it - ^{in England} was collected by the Fresh Society

contributing liberally - The Socy. also presented
a sum of money for the ^{rection} endowment of a small
Collegiate Institution with a salary of £300. per
annum for the Rector - and £50. each for six
Students. During this winter the Bishop superin-
tended the completion and decorations of St.
Thomas' Church, which had been erected with
the money raised in England by Archdeacons,
Bisps, and by liberal local contributions, and
he was enabled notwithstanding the severity
of the winter, to preach every Sunday, either
in St. John's or in one of the neighbouring
Port Harbours - The next summer was again
passed in visitations, and the hardships of
travelling were mitigated by the liberality
of the S. P. S. - in granting the Bishop £200. to
defray the expenses of hiring a fishing craft,
but there were many stations visited, where
even this accommodation was unavailable -

In the autumn, the Bishop founded

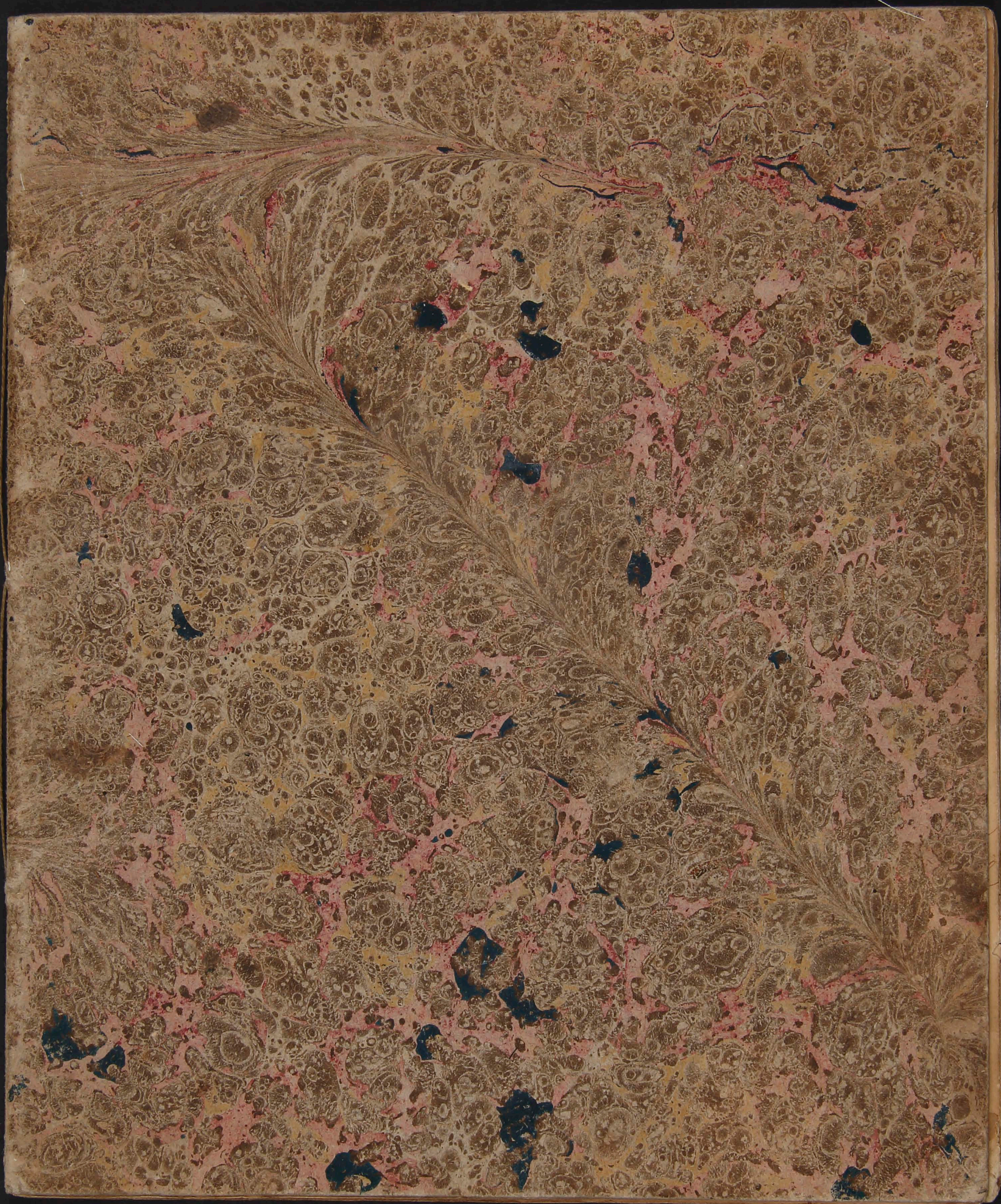
the Diocesan Church Society, and during the winter he organized a Building Committee for the Cathedral, and received from its promises of liberal contributions from the merchants, the money to be paid in four yearly instalments - His Excellency Sir John Harvey contributing with his usual munificence. The Bishop employed an Architect, to reduce and adapt for Newfoundland, a plan kindly furnished him by the Architectural Society at Oxford - a site was purchased, not in the situation which the Bishop would have chosen, but he yielded to the urgent intreaties of the merchants, that they should have their Cathedral in the heart of their Commercial Town, adjoining the old Church in which they had been accustomed to pray.

The Bishop passed the winter of 1842 in Bermuda, and returned to St. John in May 1843 - Within a fortnight he was again afloat in H. S. Election, visiting the southern coast of Newfoundland, - and on his return he found a letter from Lord Stanley, with the precious offer of translation from Jamaica - In the commencement of August the Bishop laid the foundation stone of the Cathedral, with much ceremony in the presence of the Governor, the Chief Justice, the military & the principal inhabitants of St. John.

to the clergy of Newfoundland, increased since the
Bishops appointments from five to five & twenty.
There too were the ^{students of the} Theological Institution, training
for their future labours, by the weekly expeditions
to the outer harbours to read the word of God, in those
Churches, in which hereafter they might preach -
One of their number Mr. Blackmore, had already
entered into his mission, his experience giving a
cheering hope of the future usefulness of the
Institution. There too, were the Teachers of the
Newfoundland School Society, some of them
admitted to Holy Orders, & carrying with them
to remote & dreary Stations the practical
knowledge of instructing the young, as well as
the good - A few days after, the Bishop
received the farewell of his Clergy - they had learned
the value of the Chief Pastor, who from his own
experience as a missionary, could enter into
all their anxieties and cares - their Bishops
like them had encountered snow drifts, the
cutting cold winds of winter, the painful journey
through swamps & morasses in summer & the
chills of fog which so often impeded their
passage from one Station to another - like them,
he had gladly availed himself of the shelter
of a fishermen's hut, and shared with him, the
coarse food given with so kindly a welcome.

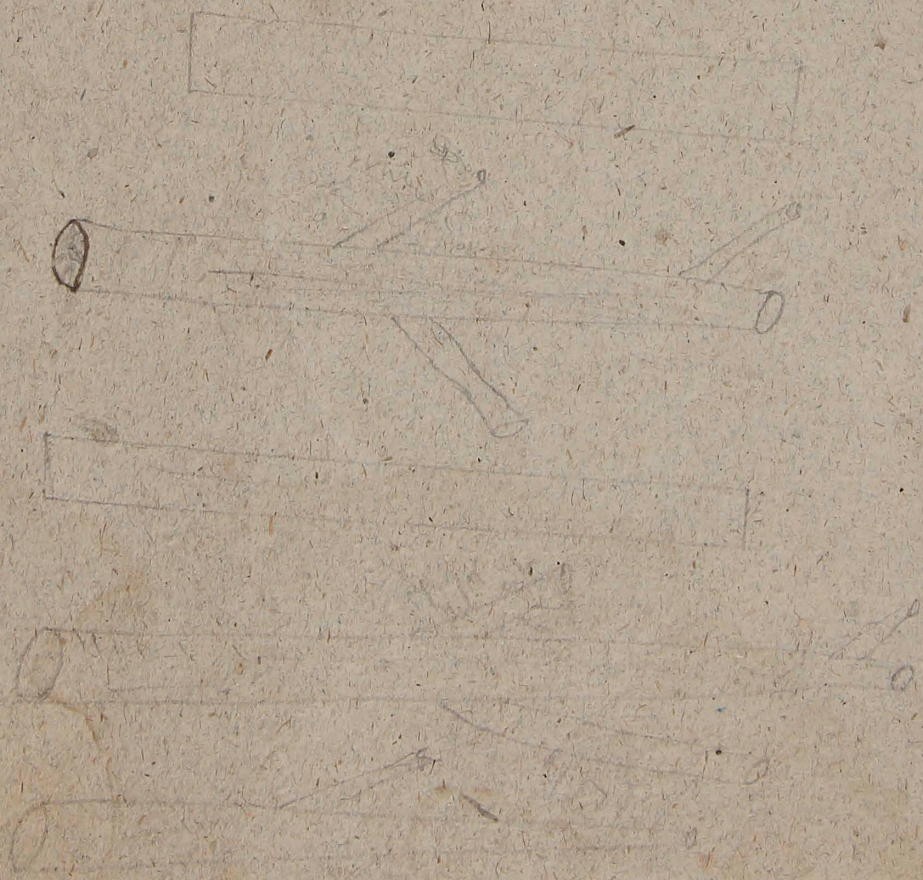
he had travelled many a pathless mile, to administer the blessed Sacraments of our Lord, to some poor Brother on the confines of another world - and had been gladdened by the return of the fishing boats, when the red flag prominently flew from their Church, or school-house, gave notice that some Ordinance of our Holy Faith was to be administered. The too, had ^{blest} rescued the Society for Propagating the Gospel, from the means of relieving the exigencies of those, who in their stern climate look to their Pastor for temporal, as well as spiritual comfort - and will they debase it at his hands, and are ready to give their time, or labour, to the erection of his Church, his school house, or his Parsonage, cheerfully drawing in his winter "haul" of wood, before their own was provided - rejoicing to meet him after their weekly toil, in the lowly but venerated building dedicated to the service of their God and to hear from his lips the words which were to cheer them on their onward path -

On the 3^d of November 1843. the Bishop arrived in Jamaica -



22nd January 1829

Andrew Black's Book



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chase

Permutation

How many varieties will take place in the succession of the following musical notes. fa, fa, fa, sol, sol, la, mi, fa,

$$\begin{array}{r}
 \frac{1}{2} \\
 \frac{2}{3} \\
 \frac{6}{4} \\
 \frac{24}{3} \\
 \frac{120}{6} \\
 \frac{720}{4} \\
 \frac{5040}{8} \\
 \frac{1}{2} = 84 \\
 12 \overline{) 40320} \\
 \underline{3360} \text{ Ans}^r
 \end{array}$$

How many changes can be made in the first three Letters of the Alphabet. Answers 6 Changes

A B C
 A C B
 B A C
 B C A
 C A B
 C B A

$$\begin{array}{r}
 \frac{1}{2} \\
 \frac{2}{3} \\
 \frac{6}{6} \text{ Answer}
 \end{array}$$

Suppose there are 4 companies in each of which there are 9 men; it is required to find how many ways 9 men may be chosen one out of each company. Answer 6561

$$\begin{array}{r}
 9 \\
 \frac{81}{9} \\
 \frac{729}{9} \\
 \frac{6561}{9}
 \end{array}$$

Arithmetical Progression

Is when the rank of numbers increase or decrease regularly by the continual adding or subtracting of the equal numbers; as 1, 2, 3, 4, 5, 6, are in Arithmetical Progression by the continual decreasing or adding of one; 11, 9, 7, 5, 3, 1, by the continual decreasing or subtracting of two.

Note, When any even number of terms differ by Arithmetical Progression, the sum of the two extremes will be equal to the two Middle numbers or any two means equally distant from the extremes, as 2, 4, 6, 8, 10, 12, where $6 + 8$, the two middle numbers, are $= 12 + 2$ the two extremes, and $= 10 + 4$ the two means $= 14$.

When the number of terms are odd, the double of the middle term will be equal to the two extremes, or of any two means equally distant from the middle term, as 1, 2, 3, 4, 5, where the double of 3 $= 5 + 1 = 2 + 4 = 6$.

In Arithmetical Progression five things are to be observed viz.

- 1 The first term; better expressed thus **F**
- 2 The last term **L**

Arithmetical Progression

3 The number of terms **N**

4 The equal difference **D**

5 The sum of all the terms **S**

Any three of which being given the other two may be found.

The first second and third terms given to find the fifth

Rule, Multiply the sum of the two extremes by half the number of terms the product or multiply half the sum of the two extremes by the whole number of terms the product is the total of all the terms
or thus

1. **F L N** are given to find **S**

$$\frac{F + L}{2} \times N = S$$

How many Strokes does the Hammer of a clock strike in 12 Hours Answer 78

$$\frac{1}{2} \times 12$$

$$\begin{array}{r} 12 \\ 136 \\ \hline 78 \end{array}$$

Arithmetical Progression

A. Man buys 17 yds of cloth, and gave for the first yard 2/-, and for the last 10/- what did the 17 yards amount to

Answer £5.2.-

$$\frac{17}{8.5}$$

$$\begin{array}{r} 20 \\ 12 \\ \hline 8.5 \\ 60 \\ 96 \\ \hline 29102.8 \\ \hline \hline 15.2 \end{array}$$

If 100 eggs were placed in a right line, exactly a yard asunder from one another, and the first a yard from a basket, what length of ground does that man go who gathers up these Hundred eggs singly, returning with every egg to the basket to put it in Answer 5 miles 1300 yds

$$\frac{100}{50}$$

$$\begin{array}{r} 100 \\ 100 \\ \hline 5059 \\ 1760 \overline{)10100} 5 \text{ Miles} \\ \underline{8800} \\ 1300 \text{ yds} \end{array}$$

The first, second, and third, terms given, to find the fourth.

RULE, From the second subtract the first the remainder divided by the third before gives the fourth; or thus

$$\begin{array}{c} 2 \quad \frac{F, L, N, \text{ are given to find } D}{\frac{L-F}{N} = D} \end{array}$$

Arithmetical Progression

A Man had 8 sons, the youngest was 4 years old and the eldest 32 they increased in Arithmetical Progression what was the common difference of their ages. Ans^r 4

$$\begin{array}{r} 8 \quad 32 \\ \hline 4 \quad 28 \\ \hline 4 \end{array}$$

A Man is to travel from London to a certain place in 12 days, and go about 3 miles the first day increasing every day by an equal excess, so that the last days journey may be 58 miles what is the daily increase and how miles distant is that place from London? Answer 5 daily increase 366 miles distant.

$$\begin{array}{r} 12 \quad 58 \\ \hline 11 \quad 56 \\ \hline 5 \text{ increase} \\ \hline 2 \quad 112 \quad 58 \\ 6 \quad \quad 166 \\ \hline 366 \text{ miles} \end{array}$$

The first, second, and fourth terms given to find the third.
Rule. From the second subtract the first the remainder divided by the fourth, and to the quotient add 1 gives the third.
 or thus

$$\frac{F - L}{D} \times 4 + 1 = N$$
 are given to find N

Arithmetical Progression

A Person traveling into the country went 3 miles the first day, and increased every day by 5 miles, till at last he went 58 miles in one day. how many days did he travel Answer 12 days

$$\begin{array}{r} 58 \\ 3 \\ \hline 153 \\ 11 \\ \hline 12 \text{ days} \end{array}$$

A Man being asked how many sons he had said that the youngest was 4 years old, and the eldest 32 and that he increased one in his family every four years how many had he Answer 8

$$\begin{array}{r} 32 \\ 4 \\ \hline 28 \\ 7 \\ \hline 8 \end{array}$$

The second, third, and fourth terms given to find the first
Rule. Multiply the fourth, by the third made less by 8 the product subtracted from the second gives the first, or thus

$$4 \quad \begin{array}{c} LND \\ L-D \times N-1 = F \end{array} \text{ are given to find } F$$

Arithmetical Progression

A Man in 10 days went from London to a certain Town in the country every days journey increasing the former by four, and the last he went was 46 miles - what was the first. Answer 10

$$\frac{46 - 3 \cdot 6 = 10}{\frac{10}{9}}$$

A Man takes out of his pocket, at eight several times so many different number of shillings every one exceeding the former by 6, the last 46 - what was the first Answer 1.

$$\frac{46 - 4 \cdot 2 = 1}{\frac{6}{2}}$$

The fourth, third, and fifth, given to find the first.

RULE. Divide the fifth by the third, and from the quotient subtract half the product of the fourth multiplied by the third left, give the first or thus

5 **N, D S are given to find F**

$$\frac{S}{N} \frac{D \times N - 1}{2} = F$$

A Man is to receive £360 at 12 several payments each

Arithmetical Progression

each to exceed the former by £1, and is willing to bestow the first payment on anyone who can tell him what it is - what will that person have for his pains. Ans^r £8

$$\begin{array}{r} 12 \\ 11 \end{array} \quad \begin{array}{r} 4 \\ 22 \end{array} \quad \begin{array}{r} 121369 \\ 38 \\ 22 \\ \hline 8 \end{array}$$

The first, third and fourth given to find the second.
RULE. Subtract the fourth from the product of the third multiplied by the fourth; that remainder added to the first gives the second; or thus,

$$6 \quad F, N, D, \text{ are given to find } L$$

$$ND - D \times F = L$$

What is the last number of an arithmetical progression beginning at 6 and continuing by the increase of 8 to 20 places Answer 158 last number

$$\begin{array}{r} 20 \\ 160 \\ 8 \\ \hline 158 \end{array}$$

A Debt can be Discharged in a year by paying 1/- the first week 3 shillings the second and so on at

Arithmetical Progression

ways 2/- more every week; what is the debt and what will payment be Ans^r £5.3 last payment Debt £135.4

$$\begin{array}{r} 52 \\ \times 52 \\ \hline 104 \\ \times 20 \\ \hline 2080 \\ \hline 10400 \\ \hline 10604 \end{array}$$

$$\begin{array}{r} 103 \\ \times 103 \\ \hline 1030 \\ \times 20 \\ \hline 2060 \\ \hline 10300 \\ \hline 10603 \end{array}$$

What Debt can be discharged in a year and in what time supposing the first week the payment be 1/- and the payments every week to increase by 2/- till the last payment be £5.3 Ans^r The debt £135.4 time 52 weeks

$$\begin{array}{r} 52 \\ \times 52 \\ \hline 104 \\ \times 20 \\ \hline 2080 \\ \hline 10400 \\ \hline 10604 \end{array}$$

$$\begin{array}{r} 103 \\ \times 103 \\ \hline 1030 \\ \times 20 \\ \hline 2060 \\ \hline 10300 \\ \hline 10603 \end{array}$$

What Debt can be discharged in a year by weekly payments in arithmetical progression whereoff the first payment is 1/- and the last £5.3 and what is the common difference Answer 2/- difference £135.4 debt

$$\begin{array}{r} 52 \\ \times 52 \\ \hline 104 \\ \times 20 \\ \hline 2080 \\ \hline 10400 \\ \hline 10604 \end{array}$$

$$\begin{array}{r} 103 \\ \times 103 \\ \hline 1030 \\ \times 20 \\ \hline 2060 \\ \hline 10300 \\ \hline 10603 \end{array}$$

Geometrical Progression

Is the increasing or decreasing of any rank of numbers by some common ratio; that is by the continual multiplication or division of some equal number; as 2, 4, 8, 16, increase by the multiplier 2; and 16, 8, 4, 2, decrease by the divisor 2.

Note. When any number of terms is continued in Geometrical Progression, the product of the two extremes will be equal to any two means equally distant from the extremes; as 2, 4, 8, 16, 32, 64, where 64×2 are $= 4 \times 32$ and $8 \times 16 = 128$

When the number of terms are odd the middle term multiplied into itself will be equal to the two extremes or any two means equally distant from the mean; as 2, 4, 8, 16, 32 where $2 \times 32 = 4 \times 16 = 8 \times 8 = 64$

In Geometrical progression the same 5 things are to be observed as in arithmetical viz.

1st The first term

2^d The last term

Geometrical Progression

3 the number of terms

4 The equal difference or ratio

5 The sum of all the terms.

Note As the last term in a long series of numbers is very tedious to come at, by continual multiplication therefore, for the reader finding it out there is a series of numbers made use of in Arithmetical Proportion called indices beginning with an unit whose common difference is one; whatever number of indices you make use of set as many numbers (in such Geometrical Proportion as is given in the question) under them.

As 0, 1, 2, 3, 4, 5, 6. indices

1, 2, 4, 8, 16, 32, 64. numbers in Geometrical proportion

When the indices ~~But~~ if the first term in Geometrical Proportion be different from the ratio the indices must begin with a cipher

As 0, 1, 2, 3, 4, 5, 6. indices

1, 2, 4, 8, 16, 32, 64. numbers of terms in Geom. pro.

When the indices begins with a cipher the sum of the indices made choice of must always be one less

Geometrical Progression

less than the number of terms given in the question
for 1 in the indices is over the 2nd term and 2 over the third

And any two of the indices together and that sum
will agree with the product of their respective terms

As in the first table of indices $2 + 5 = 7$

Geometrical proportion $1 \times 32 = 128$

Then in the second

$$2 + 4 = 6$$

$$1 \times 16 = 64$$

In any Geometrical Progression proceeding from unity
the ratio being known to find a remote term without
producing all the intermediate terms

Rule. Find what figures of the indices added to-
gether would give the exponent of the term wanted
then multiply the numbers standing under such
exponent into each other and it will give the term
required

When the exponent stands over the second term the
number

Geometrical Progression

number of exponents must be 1 less than the number of terms

A Man agrees for 12 peaches to pay only the price of the last reckoning $\frac{1}{4}$ for the first and a halfpenny for the second &c doubling the price to the last what must he give for them Answer £2.2.8

0, 1, 2, 3, 4, 5, 6,	64 = 6
1, 2, 4, 8, 16, 32, 64, exponents	32 = 5
	128
	192
	42048 = 11
	12 512
	20 42.8
	£2.2.8

A Country Gentleman going to a fair to buy some oxen met with a person who had 23; he demanding the price of them was answered £16 a head the Gentleman bids him £15 and he would buy them all, the other tells him it could not be taken but if he would give what the last ox would come to at a farthing for the first and doubling it to the last he should have all what

Geometrical Progression

what was the price of the oxen Answer £4369¹¹/₄

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048

$$\begin{array}{r}
 2048 = 11 \\
 2048 = 11 \\
 \hline
 16384 \\
 8192 \\
 40960 \\
 4 \overline{) 4194304} = 22 \\
 12 \overline{) 1048576} \\
 20 \overline{) 873814} \\
 \hline
 4369 \frac{11}{4}
 \end{array}$$

In any Geometrical Progression not proceeding from unity the first term and the ratio being given to find any remote term, without producing all the intermediate terms

RULE, II^d, Proceed as in the last, only observe that every product must be divided by the first term.
A Sum of money is to be divided among 8 persons the first to have £20, the second £60, and so on in triple proportion - what will the last have Answer £43740

Extended on next page

Geometrical Progression

⁰20, ¹60, ²180, ³540, ⁴1620

$$\begin{array}{r} 1620 = 4 \\ 540 = 3 \\ \hline 64800 \\ 8100 \\ \hline 201874800 = 7 \\ \hline \hline 143740 \end{array}$$

A Gentleman dying left 9 sons to whom and to his executor he bequeathed in the following manner viz, to his executor £50; his youngest son was to have as much more as the executor, and each son to exceed the next younger by as much more - what was the eldest sons portion. Ans^r £25600

⁰50, ¹100, ²200, ³400, ⁴800, ⁵1600

$$\begin{array}{r} 1600 = 5 \\ 800 = 4 \\ \hline 280000 \\ \hline 25600 \end{array}$$

The first term, ratio, and number of terms given to find the sum of all the terms.

Rule.

Find the last term, as before: then subtract the first from it, and divide the remainder by the ratio less one to the quotient of which add the greater gives the sum required.

A Servant skilled in numbers agreed with a gentleman to serve him 12 months provided he would give a farthing for the first months service a penny for the second and $\frac{1}{4}$ for the third &c what

Geometrical Progression
what was the wages Answer £ 5825..8..5

what was the wages Answer £ 5825..8..5

0, 1, 2, 3, 4, 5, 6,
1, 4, 16, 64, 256, 1024, 4096

$$\begin{array}{r} 4096 = 6 \\ 1024 = 5 \\ \hline 16384 \\ 8192 \\ \hline 40960 \\ \hline 4194304 = 11 \\ \hline 4194303 \\ \hline 1398101 \\ 4194304 \\ \hline 15592405 \\ 121398101 \\ \hline 201165085 \\ \hline 4382585 \end{array}$$

A man bought a Horse and by agreement was to give a farthing for the first nail three for the second & there were 4 shoes and in each shoe 8 nails what was the worth of the horse Answer £ 9 6 5 11 4 6 8 1 6 9 3 13 1 4

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
1, 3, 9, 27, 81, 243, 729, 2187, 6561, 19683, 59049,

177147, 533441, 1594323, 4782969, 14348907, 43046725,

Extended on next page

Geometrical Progression

$$\begin{array}{r}
 43046721 = 16 \\
 74328907 = 15 \\
 \hline
 384204896 \\
 344313768 \\
 172186884 \\
 129140163 \\
 172186884 \\
 43046721 \\
 \hline
 3 \overline{) 617673396283947} = 31 \\
 \hline
 2 \overline{) 617673396283946} \\
 308836698141973 \\
 \hline
 617673396283947 \\
 4926510094425920 \\
 \hline
 12231627523606480 \\
 20193022936388734 \\
 \hline
 1965114681693134
 \end{array}$$

A certain person married his Daughter on New Years day, and gave her Husband 1/- towards her portion promising to double it on the first day of every month for one year what was her portion? Answer £204.15.

0, 1, 2, 3, 4, 5, 6,
1, 2, 4, 8, 16, 32, 64

$$\begin{array}{r}
 64 = 6 \\
 32 = 5 \\
 \hline
 128 \\
 192 \\
 \hline
 2048 = 11 \\
 \hline
 2044 \\
 2048 \\
 \hline
 204095 \\
 \hline
 \hline
 £204.15
 \end{array}$$

Geometrical Progressions

A Laceman well versed in numbers agreed with a gentleman to sell him 22 yards of rich gold brocade lace, for 2 pins the first yard. 6 pins the second &c in triple proportion. I desire to know what he sold the lace for if the pins were valued a 100 for a farthing, also what the laceman got or lost by the sale thereof supposing the lace stood him

in £7 per yard. Ans the lace sold for £32 6886..0..9 Gain £326732..9

0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.
2, 6, 18, 54, 162, 486, 1458, 4374, 13122, 39366, 118098, 354294

354294 = 11
118098 = 10
2834352
3188646
28343520
3897234
21841412812 = 21
20920706406
20920706406
341841412812
262762119217
100313810596108
4313810596
1278452649
2065377209
326886009
154000
326732009

70 £ 22
1:7::22
154

One
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square
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of square
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allowin
0. 1. 2.
1, 2, 4,
16
65536,
23
838860
28
268435

with a gen
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proportion
he pins were
man got
stood him

10. 11.
 18,354 294

0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.
1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768
16 17 18 19 20 21 22
65536, 131072, 262144, 524288, 1048576, 2097152, 4194304
23 24 25 26 27
8388608, 16777216, 33554432, 67108864, 134217728,
268435456, 536870912, 1073741824, 2147483648, 4294967296
28 29 30 31 32
268435456, 536870912, 1073741824, 2147483648, 4294967296

Geometrical Progression

| | | | |
|--------|--------------------|------------|------------|
| | 4 | 294967296 | -32 |
| | 214 | 7483648 | -31 |
| | 343 | 59738368 | |
| | 1717 | 9869184 | |
| | 25769 | 803776 | |
| | 12884 | 901888 | |
| | 343597 | 38368 | |
| | 1717986 | 9084 | |
| 3 | 0064771 | 6022 | |
| 1 | 7179869184 | | |
| 4 | 294967296 | | |
| 4 | 589934592 | | |
| 92 | 233720368547758 | 08 | 63 |
| 92 | 233720368547758 | 07 | |
| 92 | 233720368547758 | 08 | |
| 640000 | 184467440737095516 | 1346 | |
| | 12800000 | 0737095516 | 2882303709 |
| | 5646744 | | 7205769403 |
| | 5120000 | | |
| | 5267440 | | |
| | 5120000 | | |
| | 1474407 | | |
| | 1280000 | | |
| | 1944078 | | |
| | 1020000 | | |
| | 2403370 | | |
| | 1920000 | | |
| | 4873709 | | |
| | 4480000 | | |
| | 3937095 | | |
| | 3840000 | | |
| | 970935 | | |
| | 640000 | | |
| | 3309551 | | |
| | 3200000 | | |
| | 1095516 | | |
| | 640000 | | |
| | 455516 | | |

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 3rd Writ
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 4th M
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 and to
 proceed
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Extraction of the Square Root

Rule 1st Divide the given number into periods of two figures each beginning at the right hand, and pointing towards the left in integers, and toward the right in decimals. Every period will give one figure in the root.

2nd Find the greatest square number in the left hand period place its root in the quotient, subtract its square from the said period and to the remainder bring down the second period for a dividend

3rd Write the double of the part of the root found on the left hand of the dividend, divide by it, omitting the units place set the result in the quotient and annex it also to the divisor.

4th Multiply the divisor thus completed by the last figure placed in the root; Subtract the product from the dividend and to the remainder bring down the third period for a new dividend proceed in the same manner till all the periods are brought down

Note 1st The root consists of as many whole numbers and decimals

Extraction of the Square Root
 Decimals as there are periods belonging to each
 2nd. If there be a remainder after all the periods are used
 the operation may be continued at pleasure by annexing
 periods of ciphers.

3rd Roots of vulgar fractions are found by extraction the root
 of the numerator for a new numerator and the root of the
 denominator for a new denominator but if that cannot
 be done exactly reduce the vulgar fractions to a decimal
 and proceed as before.

Required the square root of 144 Answer 12

$$\begin{array}{r} 144 \div 12 \\ 12 \overline{) 144} \\ \underline{144} \\ 0 \end{array}$$

What is the square root of 1728 Answer 41.5 575

$$\begin{array}{r} 1728 \div 41.5 \\ 41.5 \overline{) 1728} \\ \underline{1680} \\ 480 \\ \underline{4725} \\ 575 \end{array}$$

What is the square root of 40804 Answer 202

$$\begin{array}{r} 40804 \div 202 \\ 202 \overline{) 40804} \\ \underline{40400} \\ 404 \end{array}$$

Extraction of the Square Root

What is the square root of 53118116 Answer 23046

$$\begin{array}{r} 53118116 \sqrt{23046} \\ 43 \overline{) 731} \\ \underline{129} \\ 4604 \overline{) 21181} \\ \underline{18416} \\ 46086 \overline{) 276516} \\ \underline{276516} \end{array}$$

What is the root of 2916 Answer 54

$$\begin{array}{r} 2916 \sqrt{54} \\ 25 \overline{) 416} \\ \underline{416} \end{array}$$

What is the root of 421685 Answer 649⁴⁸⁴

$$\begin{array}{r} 421685 \sqrt{649} \\ 36 \overline{) 616} \\ \underline{496} \\ 1289 \overline{) 12085} \\ \underline{11601} \\ 484 \end{array}$$

What is the root of 289 Answer 17

$$\begin{array}{r} 289 \sqrt{17} \\ 17 \overline{) 189} \\ \underline{189} \end{array}$$

In a square plantation containing 505995 trees each 6 feet distance what is the length of the side Answer 4268 feet nearly.

$$\begin{array}{r} 505995 \sqrt{4267} \\ 3035976 \overline{) 18215820} \\ \underline{18} \\ 82 \overline{) 221} \\ \underline{164} \\ 846 \overline{) 5758} \\ \underline{5076} \\ 8527 \overline{) 68220} \\ \underline{59689} \\ 8531 \end{array}$$

Extraction of the Square Root

A Gentleman has two fields the first contains 8 acres 2 roods 1 pole, the second 6 ac 2 roods he wishes to exchange them for a square field required the side of the square. Ans 49 poles

$$\begin{array}{r}
 \text{ac ro po} \\
 8^{\text{a}} 2^{\text{r}} 1^{\text{p}} \\
 6^{\text{a}} 2^{\text{r}} 0^{\text{p}} \\
 \hline
 15^{\text{a}} 0^{\text{r}} 1^{\text{p}} \\
 4 \\
 \hline
 6040 \\
 2400 \overline{) 49 \text{ poles}} \\
 89 \overline{) 801} \\
 \underline{801}
 \end{array}$$

A Gentleman has two circular ponds in his pleasure ground; the diameter of the one is 200 feet and the other 3 times as large What is its diameter. Ans 366.4204

$$\begin{array}{r}
 200 \\
 600 \\
 \hline
 120000 \overline{) 366.4} \\
 64 \overline{) 300} \\
 \underline{256} \\
 686 \overline{) 4400} \\
 \underline{4116} \\
 704
 \end{array}
 \qquad
 \begin{array}{r}
 200 \\
 3 \\
 \hline
 600
 \end{array}$$

A Wall is 48 feet high and a ditch before it is 36 feet wide required the length of a ladder that will reach from the opposite side of the ditch to the top of the Wall. Answer 60 feet.

Extraction of the Square Root

$$\begin{array}{r}
 48 \\
 48 \\
 \hline
 384 \\
 192 \\
 \hline
 2304 \\
 1296 \\
 \hline
 3600 \overline{) 60} \\
 36 \\
 \hline
 00
 \end{array}$$

$$\begin{array}{r}
 36 \\
 36 \\
 \hline
 216 \\
 108 \\
 \hline
 1296
 \end{array}$$

Standing on the side of the River Tweed, I found that a line stretched from the top of a precipice rising perpendicu-
larly 72 yards on the opposite side, measured 120 yards, re-
quired the breadth of the river at that place. Ans^r 96 yards

$$\begin{array}{r}
 72 \\
 72 \\
 \hline
 144 \\
 504 \\
 \hline
 5184
 \end{array}$$

$$\begin{array}{r}
 120 \\
 120 \\
 \hline
 14400 \\
 8184 \\
 \hline
 9216 \overline{) 96} \\
 81 \\
 \hline
 1126 \\
 1126 \\
 \hline
 0
 \end{array}$$

Two Men travelled from the same town: the one north
28 miles per day, and the other east 36 miles; how far were
they distant after travelling 6 days Answer 273.6 2304

$$\begin{array}{r}
 28 \\
 28 \\
 \hline
 168 \\
 168 \\
 \hline
 1344 \\
 1008 \\
 \hline
 168 \\
 28224
 \end{array}$$

$$\begin{array}{r}
 36 \\
 36 \\
 \hline
 216 \\
 216 \\
 \hline
 1296 \\
 226 \\
 \hline
 432 \\
 46656 \\
 28224 \\
 \hline
 74880 \overline{) 273.6} \\
 47348 \\
 329 \\
 \hline
 1980 \\
 1629 \\
 \hline
 35100 \\
 32796 \\
 \hline
 2304
 \end{array}$$

Extraction of the Square Root

Three Towns *A*, *B*, and *C*, are so situated that *B* lies 88 miles south of *A* and *C* 66 miles west of *A*, what is the distance between *B* & *C* Answer 110 miles

$$\begin{array}{r} 88 \\ 88 \\ \hline 704 \\ 704 \\ \hline 7744 \end{array}$$

$$\begin{array}{r} 66 \\ 66 \\ \hline 396 \\ 4356 \\ \hline 7744 \\ \hline 12100 \end{array} \quad \begin{array}{r} 110 \\ 21 \overline{) 121} \\ \underline{21} \\ 00 \end{array}$$

I do not know that

A Castle is surrounded by a ditch 40 yards wide, and a scaling ladder 50 yards long will reach from the outside of the ditch to the top of the castle, what is the height of the castle. Answer 30 Yards

$$\begin{array}{r} 40 \\ 40 \\ \hline 1600 \end{array}$$

$$\begin{array}{r} 50 \\ 2500 \\ \hline 1600 \\ \hline 900 \end{array} \quad \begin{array}{r} 30 \\ 9 \overline{) 90} \\ \underline{9} \\ 00 \end{array}$$

A Ladder, 40 feet long, may be so placed as to reach a window 33 feet from the ground on one side of the street and by only turning it over, without moving the foot out of its place it will do the same by a Window 21 feet high

high on
Answer

$$\begin{array}{r} 16 \\ 10 \\ \hline 3 \\ 4 \\ \hline 11 \\ 8 \\ \hline 2 \\ 2 \end{array}$$

Straight
part of
feet from
or 60 feet

required

$$\begin{array}{r} 960 \\ 8100 \\ \hline 2016 \\ \hline 5184 \end{array} \quad \begin{array}{r} 72 \\ 49 \overline{) 5184} \\ \underline{284} \\ 284 \end{array}$$

Extraction of the Square Root

high on the other side required the breadth of the street

Answer 56 feet 7 in

$$\begin{array}{r}
 40 \\
 \underline{40} \\
 1600 \\
 1089 \\
 \hline
 511 \overline{) 2261089} \\
 \underline{4} \\
 111 \\
 \underline{84} \\
 2700 \\
 \underline{2676} \\
 24
 \end{array}$$

$$\begin{array}{r}
 21 \\
 \underline{21} \\
 42 \\
 \underline{441}
 \end{array}$$

$$\begin{array}{r}
 1600 \\
 \underline{441} \\
 1159 \overline{) 34} \\
 \underline{259} \\
 256 \\
 \underline{3}
 \end{array}$$

Straight in a line betwixt two Trees stands a statue the part of it which is level with the bottom of the trees, is just 90 feet from the top of each; the one tree plumb 54 feet the other 60 feet, they stand on the opposite banks of a canal required its breadth. Answer 139082

$$\begin{array}{r}
 90 \\
 \underline{8100} \\
 2916 \\
 5184 \overline{) 32} \\
 \underline{49} \\
 142 \overline{) 284} \\
 \underline{282}
 \end{array}$$

$$\begin{array}{r}
 8100 \\
 \underline{3600} \\
 4500 \overline{) 6} \\
 \underline{36} \\
 900 \\
 \underline{889} \\
 110000 \\
 \underline{107264} \\
 273600 \\
 \underline{268324} \\
 5276
 \end{array}$$

Extraction of the Square Root

A Company of Grenadiers behaved so bravely in battle that their general gave them 12 guineas and 7^d to be equally divided among them; every man was to have as many pence as there were men in the company, require the number of men and how much each received

Answer 55 men and 55 pence

$$\begin{array}{r} 12 \text{ guineas } 7^d \\ 21 \text{ shillings } 14^d \\ 12 \text{ pence } 7^d \\ \hline 3025 \end{array} \quad \begin{array}{r} 55 \overline{) 3025} \\ \underline{11} 605 \\ \underline{11} 55 \text{ pence} \end{array}$$

The Army with which Alexander the Great invaded Asia, consisted of 38025 Soldiers; when they were formed into a square, how many were there in rank and file

Answer 195

$$\begin{array}{r} 38025 \overline{) 1} \\ 29 \overline{) 280} \\ \underline{261} 1925 \\ 385 \overline{) 1925} \\ \underline{1925} \end{array}$$

A Gentleman has a garden of an irregular form which measures 60025 square ells he wishes to exchange

Extraction

it for a
number
of the square

$$\begin{array}{r} 600 \\ 4 \overline{) 200} \\ \underline{176} 24 \\ 485 \overline{) 24} \end{array}$$

Extraction

Rule

figures e
pointing

the place

nd Find

hand p

first figure

the said

next per

Extraction of the Square Root

it for a square one, required the side of the square and the number of acres the gardens contains Answer 245 side of the square; it contains 10 ac. 1 ro. 27 fells, 13 square ell.

$$\begin{array}{r} 60025 \div 245 \\ 44 \overline{) 200} \\ \underline{176} \\ 2425 \\ 485 \overline{) 2425} \\ \underline{2425} \end{array}$$

$$\begin{array}{r} 245 \\ 245 \\ \hline 1225 \\ 980 \\ \hline 490 \\ 36 \overline{) 660025} \\ \underline{610004} \\ 401665 \\ \underline{44127} \\ 10112713 \end{array}$$

Extraction of the Cube Root

Rule. 1st Divide the given number into periods of three figures each beginning at the right hand in integers and pointing toward the left. But in decimals begin at the place of thousands and point toward the left.
2nd Find a divisor the greatest cube number in the left hand period and place the root of that number as the first figure of the root sought; subtract the ^{number itself} remainder from the said period and to the remainder bring down the next period for a dividend

Extraction of the Cube Root

3rd Find a divisor, by multiplying the part of the root found by 300 divide the dividend by it and put the quotient figure for the next figure of the root

4th Multiply the part of the root formerly found by the last figure placed in the root, and this product by 30 place this last product under the divisor and under this product write the square of the figure placed in the root

5th Multiply the sum of these three by the figure last placed in the root, and subtract the product from the dividend

6th To the remainder bring down the next period for a new dividend, with which proceed as before

Required the Cube Root of 1728 Answer 12

$$\begin{array}{r}
 1728 \sqrt{12} \\
 300 \overline{) 1728} \\
 \underline{60} \\
 360 \\
 \underline{360} \\
 0
 \end{array}$$

Required the Cube Root of 48228544 Answer 364

Extraction of the Cube Root

$$\begin{array}{r}
 48228544/364 \\
 \underline{27} \\
 2700 \quad 27228 \\
 \underline{540} \\
 3276 \quad 19656 \\
 \underline{388800} \quad 1572544 \\
 4320 \\
 \underline{16} \\
 393136 \quad 4 \quad 1572544
 \end{array}$$

Required the Cube Root of 40107047967 Answer 3423

$$\begin{array}{r}
 40107047967/3423 \\
 \underline{27} \\
 2700 \quad 13107 \\
 \underline{360} \\
 3076 \quad 12304 \\
 \underline{346800} \quad 803047 \\
 2040 \\
 \underline{4} \\
 348841 \quad 697688 \\
 \underline{35089200} \quad 105359967 \\
 30780 \\
 \underline{9} \\
 95119989 \quad 3 \quad 105359967
 \end{array}$$

Required the Cube Root of 14706125 Answer 245

$$\begin{array}{r}
 14706125/245 \\
 \underline{8} \\
 1200 \quad 6706 \\
 \underline{240} \\
 1456 \quad 5824 \\
 \underline{4} \\
 172800 \quad 882125 \\
 3600 \\
 \underline{25} \\
 176425 \quad 5 \quad 882125
 \end{array}$$

Extraction of the Cube Root

Required the Cube Root of $\frac{13824}{42875}$ Answer $\frac{24}{35}$

$$\begin{array}{r} 13824 \div 24 \\ 1200 \overline{) 13824} \\ \underline{240} \\ 16 \\ \underline{1456} \\ 4 \end{array}$$

$$\begin{array}{r} 42875 \div 35 \\ 2700 \overline{) 42875} \\ \underline{450} \\ 25 \\ \underline{3175} \\ 15875 \end{array}$$

Required the Cube Root of 1282119155125 Answer 23405

$$\begin{array}{r} 1282119155125 \div 23405 \\ 1200 \overline{) 12821} \\ \underline{180} \\ 9 \\ \underline{1380} \\ 3 \\ 4167 \\ \underline{158400} \\ 2760 \\ \underline{16} \\ 161476 \\ \underline{16426800} \\ 7020 \\ \underline{18} \\ 16433820 \\ \underline{1642680000} \\ 351000 \\ \underline{25} \\ 1643031025 \\ \underline{5} \end{array}$$

Note. All similar solids are to each other, as the Cube of their sides, diameters, &c.

If a Bullet of 3 inches diameter weigh 4 lb. what will

Extraction of the Sq Cube Root
 a bullet weigh whose diameter is 6 inches Answer 32 lb

$$\begin{array}{r} \text{in} \quad \text{lb} \quad \text{in} \\ 3:4::6 \\ \hline 3 \\ \hline 9 \\ \hline 27 \\ \hline \end{array} \quad \begin{array}{r} 36 \\ \hline 216 \\ \hline 9864 \\ \hline 96 \\ \hline 32 \end{array}$$

If a Ship of 100 tons be 44 feet long at the keel what length must the keel of a ship be that carries 220 tons Answer 57.226

$$\begin{array}{r} \text{Tons} \quad \text{feet} \quad \text{Tons} \\ 100:44::220 \\ \hline 176 \\ \hline 176 \\ \hline 1036 \\ \hline 44 \\ \hline 4444 \\ \hline 7744 \\ \hline 851840 \\ \hline 1703680 \\ \hline 170368 \\ \hline 100 \overline{) 18740480} 5 \\ \hline 18740480 \\ \hline 125 \\ \hline 750062404 \\ \hline 1050 \\ \hline 49 \\ \hline 859960193 \\ \hline 9447002217000 \\ \hline 3420 \\ \hline 4 \\ \hline 978124 \\ \hline 98155200254752000 \\ \hline 34320 \\ \hline 4 \\ \hline 98189524 \\ \hline 2 \\ \hline 9822385200196379048 \\ \hline 1020960 \\ \hline 36 \\ \hline 9823415196 \\ \hline 6 \\ \hline 38940491176 \\ \hline 32450824 \end{array}$$

Extraction of the Cube Root
 There is a cubical Vessel whose side is 12 inches; required
 the side of a Vessel that will hold three times as much. Ans 17.32

$$\begin{array}{r}
 12 \\
 \underline{12} \\
 144 \\
 \underline{12} \\
 1728 \\
 3 \\
 \hline
 5184 \overline{) 17306} \\
 300 \quad 4184 \\
 \underline{210} \\
 49 \\
 559 \\
 \underline{7} \quad 3913 \\
 86700 \quad 241000 \\
 \underline{1530} \\
 9 \\
 88239 \quad 264717 \\
 8978700 \quad 6253000 \\
 \underline{5190} \\
 0 \\
 8983899 \\
 897870000 \quad 6283000000 \\
 \underline{311400} \\
 36 \\
 898181436 \\
 \underline{6} \\
 5380088616 \\
 893911384
 \end{array}$$

There are three Boxes the content of one is 10000 solid
 or cubical inches, of another 16656 and of the third 20000
 required the length side of a cubical box that shall
 contain as much as all the three

Extended on next page

To find
 Two thirds
 the beam
 If the D
 10 feet req

G. Extraction of the Cube Root

$$\begin{array}{r}
 10000 \\
 16656 \\
 20000 \\
 \hline
 46656 \quad 36 \\
 27 \\
 2700 \quad 19656 \\
 540 \\
 36 \\
 \hline
 3276 \quad 19656 \\
 6
 \end{array}$$

To find the length of Masts.
 Two thirds of the length of the keel, and the breadth of
 the beam is the length of the Main Mast.
 If the Keel of a Ship be 108 feet long and the beam
 40 feet required the length of the main mast. Ans 112

$$\begin{array}{r}
 108 \\
 2 \\
 3 \overline{) 216} \\
 72 \\
 40 \\
 \hline
 112
 \end{array}$$

Geography

3 feet make 1 yard
 1760 yards = 1 Mile
 69½ miles, or 60 geographical miles = 1 Degree

The degree is usually reckoned in round numbers at 69½ miles; but if accuracy be attended to the number in the table is too large; the real length of a degree is 365181 English feet, or 69 miles 288 yards this has been ascertained by actual measurement, so that the Circumference of the Earth is equal to 69 miles, 288 yards $\times 360$ (because in every circle there are 360 degrees) = 25000 miles nearly.

Geographers reckon on the globe two kinds of degrees viz. degrees of latitude, and degrees of longitude. (Longitude expresses the distance of meridians, or circles which are supposed to pass over the head from north to South; and Latitude expresses the distance of a place north and South from the equator) The degrees of latitude, which are measured from north to South on the meridian are all of one length as above; But the degrees of Longitude or the circles which pass the round the

the earth is
 in proceeding
 for they are
 ng is a table
 ried to three

| Lat. |
|------|
| 0 |
| 10 |
| 15 |
| 20 |

Here it is
 more than
 the pole
 Probl
 two places

Rm

Geography

the earth in each parallel of Latitude, continually diminish
in proceeding from the equator towards the poles, but at the equa
tor they are of the same length as those of Latitude. The follow
ing is a table of the length of the degrees of Longitude car
ried to three places of Decimals, in every 5 degrees of latitude

TABLE.

| Lat. | Eng. miles | Lat. | Eng. miles | Lat. | Eng. miles | Lat. | Eng. miles |
|------|------------|------|------------|------|------------|------|------------|
| 0 | 69.200 | 25 | 62.716 | 50 | 44.481 | 75 | 17.910 |
| 5 | 68.936 | 30 | 59.929 | 55 | 39.691 | 80 | 12.016 |
| 10 | 68.149 | 35 | 56.685 | 60 | 34.600 | 85 | 6.031 |
| 15 | 66.842 | 40 | 53.010 | 65 | 29.245 | 90 | 0.000 |
| 20 | 65.026 | 45 | 48.931 | 70 | 23.667 | | |

Here it is evident, that at latitude 40° , the degree is little
more than 53 miles in length; at 70° it is $23\frac{1}{2}$ miles; and at
the pole or 90° , it comes to nothing, it being supposed to be a point.

Problem 1st To find the distance, in miles between any
two places having the same degree of latitude

Rule. Having found the distance between the places
in

Geography

place, in degrees, multiply the number so found by the number in the table opposite the given degree of latitude.

How many Miles distant is Madrid in Spain from Bursa in Natolia, the latitude of both is 40° N. but the long. of Madrid is about 3° W. and that of Bursa 29° E. Answer 1696.32

The difference in longitude is $3^{\circ} + 29^{\circ} = 32$, this multiplied by 53.01 the number of miles in a degree at the given latitude, gives 1696 for the miles between Madrid and Bursa.

$$\begin{array}{r} 3 \\ 29 \\ \hline 32 \end{array} \qquad \begin{array}{r} 53.01 \\ 32 \\ \hline 10602 \\ 15903 \\ \hline 169632 \end{array}$$

Problem. 2nd. To find the distance between any two places having the same degree of longitude

Rule. Multiply the number of degrees between the places by 69.2 and the answer is in miles
How far is London from Mount Atlas in Africa the former is $51\frac{1}{2}^{\circ}$ N. L. the latter $31\frac{1}{2}^{\circ}$ N. L. Answer 1384 Miles
Here the distance is 20° and $20 \times 69.2 = 1384$ Miles

$$\begin{array}{r} 51.5 \\ 31.5 \\ \hline 20.0 \\ 69.2 \\ \hline 1384.40 \end{array}$$

Time.

its Axis ever

360 in the

Hence this

PROBL

Rule.

by 4 and

Required

Probl

Rad

by 15, an

Required

Geography

Time. is measured by the revolution of the Earth about its Axis every revolution is completed in 24 Hours, and as there are 360° in the great circle of the Earth, so $\frac{360^\circ}{24} = 15^\circ$ 1 hour of time

Hence this **Table.**

15° of motion answers to 60' in time or 1 hour

1° - - - - - 4 - - - - -

PROBLEM 1st To convert time into motion

Rule. Multiply the Hours by 15, and the minutes by 4, and the product is the answer

Required the Motion of 4 hours 20 minutes Answer 65°

$$\begin{array}{r} 4 \text{ h. } 20 \text{ min.} \\ 15 \times 4 = 60 \\ 4 \times 20 = 80 \\ \hline 140 \\ \hline 65^\circ \end{array}$$

Problem 2nd To convert motion into time

Rule. Divide the given number of degrees of Motion by 15, and the answer is in time

Required the time of 65° of Motion. Answer 4 hours 20 min.

$$\begin{array}{r} 15 \overline{) 65} \\ 3 \overline{) 13} \\ \hline 4 \text{ h. } 20 \text{ min.} \end{array}$$

Geography

What o'clock is at Athens, which is $23^{\circ} 57'$ east longitude of London, now it is 12 at the metropolis. Answer, When it is 12 o'clock at London, it will be 36 minutes past 1 at Athens. Athens being east of London the clocks there will be before the clocks here.

$$\begin{array}{r} 15 \overline{) 23^{\circ} 57' 11''} \\ \underline{15} \\ 80 \\ \underline{45} \\ 35 \\ \underline{30} \\ 5 \\ \underline{5} \\ 0 \\ \underline{0} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

What o'clock is at Philadelphia in America now it is 12 at London. Answer 12 h 0 m 32 sec = 6 h 59 m 32 sec or 7 mornings. Philadelphia is $75^{\circ} 8'$ west longitude of London of course the clocks here are before the clocks there.

$$\begin{array}{r} 15 \overline{) 75^{\circ} 8' 15''} \\ \underline{45} \\ 30 \\ \underline{30} \\ 0 \\ \underline{0} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

In many maps the longitude is reckoned from Ferro one of the Canary Islands, which is $17^{\circ} 45'$ west of London.

PROBLEM 3rd To reduce the longitude of Ferro to that of London.

Re
it $17^{\circ} 30'$ and
Thus from
longitude

11nd If the
gitude 17
Thus, Be
don $52^{\circ} 48'$

3rd If the
gitude we
of Ferro f
Thus
don $17^{\circ} 45'$

By a re
London

Geography

1st Rule. If the place be east of London, subtract from it $17^{\circ}30'$ and the remainder is the longitude east of London. Thus from Ferro Constantinople is $46^{\circ}44'$; to reduce this to the longitude reckoned from the meridian of London, we say

$$\begin{array}{r} 46^{\circ}44' \\ 17^{\circ}45' \\ \hline 28^{\circ}59' \end{array}$$

2nd If the place be west from Ferro add to the given longitude $17^{\circ}45'$

Thus, Boston is $52^{\circ}48'$ west of Ferro, but it is west of London $52^{\circ}48'$

$$\begin{array}{r} 52^{\circ}48' \\ 17^{\circ}45' \\ \hline 70^{\circ}33' \end{array}$$

3rd If the place lies between Ferro and London, its longitude will be obtained by subtracting its longitude east of Ferro from $17^{\circ}45'$

Thus Lisbon is $8^{\circ}40'$ East of Ferro, and it is west of London $17^{\circ}45'$

$$\begin{array}{r} 17^{\circ}45' \\ 8^{\circ}40' \\ \hline 9^{\circ}5' \end{array}$$

By a reverse method may be reduced the longitude from London to that of Ferro

Geography

The Earth being globular, it is a usefull problem to ascertain the extent of the visible horizon; or

Problem 4 To find the distance to which a person can see at any given height of the eyes

RULE. Multiply the Square Root of the height of the eye in feet, by 1.2247, and the product is the distance in Miles to which we can see from that height. How far can a Sailor see standing at the top mast of a Ship 144 feet high. Answer 14.7 nearly

The Square root of 144 is 12; therefore $1.2247 \times 12 = 14.7$ miles. Thus in this situation a sailor might on a very clear day see land at the distance of 5 leagues nearly; and he might see another ship at a still greater distance.

$$\begin{array}{r} 144/12 \\ 22 \overline{) 44} \\ \underline{44} \end{array}$$

$$\begin{array}{r} 1.2247 \\ 14.6976 \end{array}$$

To what distance could a person see from the top of St Pauls which is 340 feet high. Answer 22.5 miles

$$\sqrt{340} \times 1.2247 = 18.44 \times 1.2247 = 22.58 \text{ miles}$$

$$\begin{array}{r} 340/18.44 \\ 224 \overline{) 1600} \\ \underline{1456} \\ 14400 \\ \underline{14436} \end{array}$$

$$\begin{array}{r} 1.2247 \\ 18.44 \overline{) 48988} \\ \underline{48988} \\ 97976 \\ \underline{1.2247} \\ 22.582668 \end{array}$$

Mis

A. Meri
£412.10

£1509.16

£47.15.8

he found

to £216.18.9

$$\begin{array}{r} 41 \\ 65 \\ 150 \\ \hline 257 \\ 689 \\ \hline £1883 \end{array}$$

A private

the Capt

the Pura

divided a

Captain

rule Man

$$\begin{array}{r} 2851.4 \\ 712.16 \\ \hline £178.4 \end{array}$$

Miscellaneous Questions

A Merchant on balancing his books he has in Cash £412.10.6; goods to the value of £650.16.7; in the Stocks £509.16.10 $\frac{3}{4}$. At the same time he owes

£47.15.8 B £105.18.9 $\frac{1}{2}$ C £14.15.2 $\frac{3}{4}$ D £804.10

he found his household and personal expenses amounted to £216.18.9 what is his neat estate. Answer £1883.5.9 $\frac{1}{2}$

$$\begin{array}{r}
 £ \\
 412.10.6 \\
 650.16.7 \\
 509.16.10\frac{3}{4} \\
 \hline
 2573.3.11\frac{3}{4} \\
 689.18.2\frac{1}{4} \\
 \hline
 £1883.5.9\frac{1}{2}
 \end{array}$$

$$\begin{array}{r}
 £ \\
 47.15.8 \\
 105.18.9\frac{1}{2} \\
 14.15.2\frac{3}{4} \\
 804.10.0 \\
 \hline
 216.18.9 \\
 689.18.2\frac{1}{4} \\
 \hline
 \hline
 \end{array}$$

A privateer takes a prize to the value of £2851.4, of which the Captain gets $\frac{1}{16}$ each of 6 Officers $\frac{1}{32}$ of the remainder & the Private Men, being 45 in number, get the rest equally divided among them what is each Mans Share? Answer

Captains share £178.4 Each Officers £83.10.7 $\frac{1}{2}$ Each private Mans share £48.5.3

$$\begin{array}{r}
 £2851.4 \\
 178.4 \\
 \hline
 2673.0 \\
 668.5 \\
 \hline
 £83.10.7\frac{1}{2}
 \end{array}$$

$$\begin{array}{r}
 83.10.7\frac{1}{2} \\
 501.3.9 \\
 \hline
 2673.0 \\
 501.3.9 \\
 \hline
 2171.16.3 \\
 241.6.3 \\
 \hline
 £48.5.3\frac{1}{2}
 \end{array}$$

Miscellaneous Questions

There is a prize of £212.14.7 to be divided among a Captain four Men and a Boy. the Captain is to have a Share and a half; the Men each a Share, and the Boy $\frac{1}{3}$ of a share what ought each person to have. Answer The Captain £54.14.0 $\frac{2}{3}$, Each Man £36.9.4 $\frac{1}{2}$ and the boy £12.3.1 $\frac{1}{2}$

$$\frac{1\frac{1}{2}}{2} \times \frac{4}{1} \times \frac{1}{3} = \frac{2\frac{1}{2}}{6}$$

$$\begin{array}{r} \text{£} 212.14.7 \\ 5 \overline{) 1276.7.6} \\ \underline{255.5.6} \\ 18.9.4\frac{1}{2} \end{array}$$

$$\frac{1}{3} \overline{) 36.9.4\frac{1}{2}} \\ \underline{12.3.1\frac{1}{2}} \\ 12.3.1\frac{1}{2}$$

How many Planks will floor a House 60 $\frac{1}{2}$ feet long, 33 $\frac{1}{2}$ feet wide, When the planks are 15 feet long and 15 inches wide. Answer 108 $\frac{4}{5}$

$$\begin{array}{r} \text{ft in} \\ 15. \overline{3} \\ 15. \overline{0} \\ \underline{3.0} \\ 18.9 \\ \underline{12} \\ 22.5 \end{array}$$

$$\begin{array}{r} \text{ft in} \\ 60. \overline{6} \\ 33. \overline{6} \\ \underline{1996.6} \\ 30. \overline{6} \\ \underline{2026.6} \\ 12. \overline{9} \\ 24321 \overline{) 108} \\ \underline{225} \\ 1821 \\ \underline{1800} \\ 21 \\ 3 \overline{) 21} \overline{4} \\ \underline{225} \overline{75} \end{array}$$

a Captain
Share and
a share
Captain
£12.3.1 $\frac{2}{7}$

6 March 1829

60 $\frac{1}{2}$ feet
are 15 feet





*9th March 1829 the day that Mons. Meg came
to the Castle of Edinburgh*

A^{to} BLACK. Edin^r.

March 9th 1829.

Miscellaneous Questions

Queen Elisabeth came to the throne of England the 17th of November 1558 and died the 24th of March 1603 in the 70th year of her age in what year was she born and how months, of 28 days each did she reign reckoning 365 days 6 hours to a year. Answer She was born in the year 1553 and reigned 578 months 2 weeks and 1 year

$$\begin{array}{r} 30 \\ 16 \\ \hline \text{Novr } 14 \\ \text{Decr } 31 \\ \text{Jan } 31 \\ \text{Feb } 28 \\ \text{Mar } 24 \\ \hline 128 \end{array}$$

$$\begin{array}{r} 1603 \\ 40 \\ \hline 1533 \end{array}$$

$$\begin{array}{r} 1602 \\ 1558 \\ \hline 44 \\ 365 \\ \hline 220 \\ 264 \\ \hline 132 \end{array}$$

$$\begin{array}{r} 11 \\ 128 \\ \hline 4 \overline{) 16199} \\ 4 \overline{) 231401} \\ \hline 57821 \end{array}$$

A Stationer sold quilts at 11/- a thousand by which he cleared 8 of his Money; but growing scarce he raised them to 13/6 a thousand, what did he clear percent by the latter price. Answer 96° 7' 3½" 11

$$\begin{array}{r} 1/3 \\ 833 \\ \hline 4 \cdot 1 \frac{1}{2} \end{array}$$

$$\begin{array}{r} \text{Sd } 11^{\circ} 0' : 13^{\circ} 6' : 100 \\ 2^{\circ} 1 \frac{1}{2}' \\ \hline 6^{\circ} 10 \frac{1}{2}' \\ 12 \\ \hline 82 \frac{1}{2} \\ \hline 330 \end{array}$$

$$\begin{array}{r} 31800 \\ 1060 \\ \hline 331800 \\ 1060 \\ \hline 96^{\circ} 7' 3 \frac{1}{2}'' 11 \end{array}$$

Miscellaneous Questions

A Grocer bought 2 hhd's of Sugar, the one weighed neat
 17 cwt 3 qrs 14 lb at £2.6.8 per cwt the other weighed neat
 18 cwt 1 qr 21 lb at 4½ per lb which he mingled together. I
 demand how much a cwt of this Mixture is worth Ans^r £2.4.3½

| | | | | | | | | | | | | |
|-----|---------|---|-----|--------|----|--|-----|--------|---|----|-------|----|
| cwt | 17 | 3 | qrs | 14 | lb | | cwt | 18 | 1 | qr | 21 | lb |
| | 4 | | | 120 | | | | 4 | | | 120 | |
| | 4 | | | 46 | | | | 4 | | | 28 | |
| | 28 | | | 12 | | | | 28 | | | 12 | |
| | 112 | | | 560 | | | | 112 | | | 560 | |
| | | | | 582 | | | | | | | 605 | |
| | | | | 142 | | | | | | | 146 | |
| | | | | 2002 | | | | | | | 2065 | |
| | | | | 560 | | | | | | | 18 | |
| | | | | 120120 | | | | | | | 16520 | |
| | | | | 10010 | | | | | | | 2065 | |
| 4 | 1121120 | | | | | | 4 | 34170 | | | | |
| 7 | 280280 | | | | | | 12 | 9292½ | | | | |
| 4 | 40040 | | | | | | 20 | 774½ | | | | |
| 12 | 10010 | | | | | | | 38½14½ | | | | |
| 20 | 834½ | | | | | | | | | | | |
| | 41½14½ | | | | | | | | | | | |

| | | | | | | | | |
|----|--------|----|-----|-------|---|----|----|----|
| lb | 8 | | cwt | 18 | 1 | qr | 21 | lb |
| | 1 | 4½ | | 4 | | | | |
| | 18 | | | 23 | | | | |
| | | | | 28 | | | | |
| | | | | 605 | | | | |
| | | | | 146 | | | | |
| | | | | 2065 | | | | |
| | | | | 18 | | | | |
| | | | | 16520 | | | | |
| | | | | 2065 | | | | |
| 4 | 34170 | | | | | | | |
| 12 | 9292½ | | | | | | | |
| 20 | 774½ | | | | | | | |
| | 38½14½ | | | | | | | |

| | | | | | | | | | | |
|-----|------|---|-----|----|----|--|---|---------|----|--------|
| cwt | 17 | 3 | qrs | 14 | lb | | £ | 41 | 14 | 2 |
| | 18 | 1 | qr | 21 | lb | | | 38 | 14 | 4½ |
| | 36 | 1 | 7 | | | | | 80 | 8 | 6½ |
| | 4 | | | | | | | 20 | | |
| | 145 | | | | | | | 1608 | | |
| | 28 | | | | | | | 12 | | |
| | 1167 | | | | | | | 19302 | | |
| | 290 | | | | | | | 4 | | |
| | 4067 | | | | | | | 77210 | | |
| | | | | | | | | 112 | | |
| | | | | | | | | 154420 | | |
| | | | | | | | | 849310 | | |
| | | | | | | | | 8647520 | | 2126 |
| | | | | | | | | 8134 | | 12531½ |
| | | | | | | | | 5135 | | 244½3 |
| | | | | | | | | 4067 | | 24½3½ |
| | | | | | | | | 10682 | | |
| | | | | | | | | 8134 | | |
| | | | | | | | | 25480 | | |
| | | | | | | | | 24402 | | |
| | | | | | | | | 1078 | | |
| | | | | | | | | 4067 | | |

Miscellaneous Questions

Shipped for Jamaica 550 pair of stockings at 11/6 per pair, and 460 yards stuff at 1/16 per yard; in return for which I had 46 cwt 3 qrs of Sugar at £1.4.6 per cwt and 1570 lb Indigo at 2/4 per lb, what remains due to me of my adventure. Answer £102.12.11 1/2

$$\begin{array}{r}
 £ \quad 0.11.6 \\
 \underline{10} \\
 5.15.5 \\
 \underline{28.15.11} \\
 316.5.- \\
 \underline{26.16.8} \\
 343.1.8
 \end{array}$$

$$\begin{array}{r}
 \begin{array}{r}
 460 \\
 2 \frac{1}{2} \overline{) 460} \\
 \underline{230} \\
 230
 \end{array}
 \quad
 \begin{array}{r}
 1.1.4.6 \\
 4 \overline{) 1.1.4.6} \\
 \underline{4.20} \\
 4.24 \\
 \underline{12} \\
 294 \\
 \underline{187} \\
 2058 \\
 \underline{2352} \\
 294 \\
 4 \overline{) 54978} \\
 12 \overline{) 13744.5} \\
 2 \overline{) 1145.4} \\
 57.5.4 \frac{1}{2}
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \begin{array}{r}
 1570 \\
 12 \overline{) 1570} \\
 \underline{128} \\
 28 \\
 12560 \\
 \underline{3140} \\
 12 \overline{) 43960} \\
 20 \overline{) 3663.4} \\
 183.3.4 \\
 \underline{57.5.4 \frac{1}{2}} \\
 240.8.8 \frac{1}{2} \\
 \underline{102.12.11 \frac{1}{2}}
 \end{array}
 \end{array}$$

My Correspondent writes me that he has purchased goods on my account to the amount of £560.10 what does his commission come to at £2 1/2 percent Answer £14.0.3

$$\begin{array}{r}
 \begin{array}{r}
 560.10 \\
 1 \frac{1}{2} \overline{) 560.10} \\
 \underline{1121} \\
 280.5 \\
 100 \overline{) 1401.5} \\
 10 \overline{) 140.2.6} \\
 \underline{214.0.3}
 \end{array}
 \end{array}$$

A Manufacturer having an equal number of Men, Women

Miscellaneous Questions

en, Boys and Girls employed, distributes £14 among them per day; to each Man he gave $\frac{1}{2}$ to each Woman $\frac{1}{3}$ to each Boy $\frac{1}{3}$, and to each Girl $\frac{1}{3}$ how many had he of each

Answer 120

$$\begin{array}{r} 14 \\ 1 \times 2 \\ 7 \frac{1}{2} \\ 3 \frac{1}{2} \\ 3 \\ \hline 2 \frac{1}{4} \\ 12 \\ \hline 28 \end{array} \quad \begin{array}{r} £ \\ 14 \\ 20 \\ \hline 280 \\ 12 \\ \hline 3360 \\ 3 \\ \hline 840 \\ \hline 120 \end{array}$$

If the Expenses of building a Church that holds 240 persons amount to £1600 and if $\frac{1}{4}$ of the seats be let at $\frac{3}{2}$ $\frac{1}{4}$ at $\frac{2}{6}$ $\frac{1}{4}$ at $\frac{1}{6}$ and the remaining fourth a $\frac{1}{6}$; what per cent do the heritors receive for their Money after paying the Minister yearly £120 of stipend Answer 8 $\frac{1}{6}$

$$\begin{array}{r} \frac{1}{4} \times 2400 \\ 6 \frac{1}{2} \times 600 \\ \hline 1800 \\ 20 \times 2100 \\ \hline 105 \end{array} \quad \begin{array}{r} \frac{1}{4} \times 600 \\ 75 \\ \hline 600 \\ 300 \\ \hline 900 \\ 45 \end{array} \quad \begin{array}{r} 600 \\ 600 \\ \hline 600 \\ 300 \\ \hline 900 \\ 30 \\ \hline 930 \\ 45 \end{array} \quad \begin{array}{r} 105 \\ 75 \\ 45 \\ 30 \\ \hline 255 \\ 120 \\ \hline 1600 : 135 :: 100 \\ 100 \\ \hline 4 \times 13500 \\ 4 \times 33 \frac{3}{4} \\ \hline 8 \frac{1}{4} = \frac{7}{6} \end{array}$$

A Labourer receives $\frac{1}{14}$ for every work-day from 5th March

Miscellaneous Questions

March (beginning on the 6th) to 4th November inclusive and $11\frac{1}{2}$ per day during the rest of the year. How much do his wages amount in a year? Answer £17.4.8

| | |
|-----------|----|
| March | 31 |
| April | 30 |
| May | 31 |
| June | 30 |
| July | 31 |
| August | 31 |
| September | 30 |
| October | 31 |
| November | 4 |

| | |
|----|------|
| 1 | 244 |
| 7 | 34 |
| 2 | 10 |
| 6 | 35 |
| 20 | 245 |
| | 12"5 |

| |
|--------|
| 364 |
| 244 |
| 121 |
| 104 |
| 52 |
| 34"8 |
| 13 |
| 20 |
| 99"8 |
| 4"19"8 |
| 12"5" |
| 17"4"8 |

A Ship's Crew took a prize of £1000 which they agreed to divide among them according to their pay and the time they had been on board the Officers & Midshipmen were 6 months on board and the Sailors 3; the Officers had 40/- a month the Midshipmen 30/- and the Sailors 22/- the Crew consisted of 4 Officers, 12 Midshipmen, and 110 Sailors; what share of the prize was each Man entitled to. Answer Each Officers share £23.2.5 $\frac{1}{4}$ 22 173 Each Midshipmans £17.6"9 $\frac{1}{2}$ Each Sailors £6"7"2 $\frac{1}{4}$

Extended on next page

Miscellaneous Questions

The question is how many yards of Silk may be thrown by this Machine in a day reckoning 10 hours to a day's work & how many in the compass of a year deducting for Sundays and great Holidays 63 days: provided no part of it ^{is lost} still

Answer 40077453600 yards

$$\begin{array}{r}
 365 \\
 63 \\
 \hline
 302 \\
 10 \\
 \hline
 30260 \\
 181200 \\
 3 \\
 \hline
 543600 \\
 73726 \\
 \hline
 3261600 \\
 9887200 \\
 3865200 \\
 16130800 \\
 3805200 \\
 \hline
 40077453600
 \end{array}$$

A Merchant sends to Spain 1300 pieces of broad cloth each 47 yds at £6 per yard to have returns from thence the one half in wine at £65 per ton and the other half in oranges at £3.10 per chest what quantity of each will he have Answer 364 tons 1 hhd of wine 676445 Chests of Oranges

Extended on next Page

Miscellaneous Questions

| | | |
|--|--|---|
| $\begin{array}{r} 1:15:6::47 \\ 12 \quad 1300 \\ \hline 186 \quad 14100 \\ \hline 47 \\ \hline 61100 \\ \hline 186 \\ \hline 366600 \\ 488800 \\ \hline 61100 \\ \hline 12 \quad 11364600 \\ \hline 20 \quad 9470510 \\ \hline \frac{1}{2} \quad 4435210 \\ \hline 236765 \end{array}$ | $\begin{array}{r} 65:1::26765 \\ 20 \quad 1500 \\ \hline 1500 \quad 473525 \\ \hline 3000 \\ \hline 8352 \\ \hline 7800 \\ \hline 5525 \\ \hline 5200 \\ \hline 325 \\ \hline 1300 \\ \hline 1300 \end{array}$ | $\begin{array}{r} 3:10:1::236765 \\ 20 \quad 70 \\ \hline 70 \quad 473525 \\ \hline 420 \\ \hline 535 \\ \hline 490 \\ \hline 452 \\ \hline 420 \\ \hline 325 \\ \hline 250 \\ \hline 45 \end{array}$ |
|--|--|---|

Three Farmers A B & C, hired a Shepherd for £12¹⁰ a year they are to pay his wages in proportion to the number of Sheep each commit to his care. A has 608, B 1200, and C 1500 What part of the wages must each Farmer pay. Answer A £2⁵ 11¹/₂ B

£4¹⁰ 8¹/₄ 276 C £5¹³ 11¹/₂ 1172

| | | |
|--|--|--|
| $\begin{array}{r} 3308:12:10::608 \\ 20 \quad 250 \\ \hline 250 \quad 30400 \\ \hline 1216 \\ \hline 152000 \\ \hline 13232 \\ \hline 19680 \\ \hline 16540 \\ \hline 3140 \\ \hline 12 \\ \hline 37680 \\ \hline 36388 \\ \hline 1292 \\ \hline 15168 \\ \hline 1860 \end{array}$ | $\begin{array}{r} 3308:250::1200 \\ 1200 \quad 20 \\ \hline 20722 \\ \hline 2280 \\ \hline 12 \\ \hline 25360 \\ \hline 26464 \\ \hline 896 \\ \hline 3584 \\ \hline 3308 \\ \hline 276 \end{array}$ | $\begin{array}{r} 3308:250::1500 \\ 1500 \quad 20 \\ \hline 520400 \\ \hline 250 \\ \hline 375000 \\ \hline 3308 \\ \hline 4520 \\ \hline 3608 \\ \hline 11120 \\ \hline 9024 \\ \hline 1106 \\ \hline 12 \\ \hline 14952 \\ \hline 13232 \\ \hline 1120 \\ \hline 4 \\ \hline 4480 \\ \hline 3308 \\ \hline 1172 \end{array}$ |
|--|--|--|

Miscellaneous Questions

How much Cloth at 5/6 per yard must be given in barter for 14 cwt 3 qrs of Sugar at £3.10 per cwt. Ans 187 yds 2 qrs 3 7/8 nls

$$\begin{array}{r} \text{Cwt} \quad \text{Ls} \quad \text{Cwt qrs} \\ 14 : 3.10 :: 14.3 \\ \hline 4 \quad 20 \\ \hline 4 \quad 70 \end{array}$$

$$\begin{array}{r} 4130 \\ 20 \overline{) 10320} \\ \underline{8260} \\ 2060 \\ \underline{2060} \\ 0 \end{array}$$

$$\begin{array}{r} \text{Ls} \quad \text{yd} \quad \text{L} \\ 5.6 : 1 :: 51.12.6 \\ \hline 12 \quad 66 \end{array}$$

$$\begin{array}{r} 1032 \\ 12 \overline{) 12390} \\ \underline{1032} \\ 2065 \\ \underline{2065} \\ 0 \end{array}$$

If 1 Sippy of lintseed sow 144 square ells how much will sow an acre. & what will it cost at 1/5 1/2 per sippy. Answer

10 pkts cost £2.18 1/4

S.E. 144 : 1 :: 1

$$\begin{array}{r} 1 \\ \hline 4 \\ \hline 40 \\ \hline 160 \\ \hline 36 \\ \hline 960 \\ \hline 480 \\ \hline 5760 \\ \hline 12 \overline{) 480} \\ \underline{480} \\ 0 \end{array}$$

Sip Sd Phs

$$\begin{array}{r} 11 : 1/2 : 5 1/2 :: 19 \\ \hline 12 \quad 40 \\ \hline 480 \\ \hline 4 \overline{) 2800} \\ \underline{12} \quad 700 \\ \hline 20 \overline{) 5800} \\ \underline{40} \quad 1800 \\ \hline 1800 \end{array}$$

If a peck of potatoes plant 100 square ells how many will plant an acre. Answer 3 bolls 2 fir 1 pk 2 2/3 lipi

S.E. : Ph : Ac

$$\begin{array}{r} 100 : 1 :: 1 \\ \hline 4 \\ \hline 40 \\ \hline 160 \\ \hline 36 \\ \hline 960 \\ \hline 480 \\ \hline 5760 \\ \hline 4 \overline{) 5760} \\ \underline{4} \quad 1760 \\ \hline 4 \overline{) 1760} \\ \underline{4} \quad 1600 \\ \hline 1600 \end{array}$$

Miscellaneous Questions

If the half of a Mark buy the fourth of a lb. how
much cochineal can I have for a Crown. Ans. 3 ounces

$$\begin{array}{r} \text{13}^0 \quad \text{16}^0 \\ \frac{1}{2} \overline{) 13.4} \quad \frac{1}{2} \overline{) 16} \quad \frac{1}{2} \overline{) 19} \\ \underline{6.8} \quad \underline{8} \quad \underline{9.5} \\ 12 \quad 12 \\ \underline{8.0} \quad \underline{6.0} \\ 8.0 \quad 4 \\ \underline{24.0} \\ 3 \end{array}$$

If a Soldier be allowed 12 lb. of Bread in 8 Days
how much will serve a Regiment consisting of 750 privates a year Answer 183 tons, 6 cwt 1 qr 5 lb

Men : Days : *M*
 1 : 8 : 12
 750 : 365 : *B*

 1 : 8 : 750
 8 : 8 : 12

$$\begin{array}{r}
 750 \\
 12 \\
 \hline
 9000 \\
 365 \\
 \hline
 45000 \\
 540000 \\
 270000 \\
 \hline
 8 \overline{) 3285000} \\
 28 \overline{) 410625} \\
 5 \overline{) 58660..5} \\
 4 \overline{) 14665} \\
 20 \overline{) 3666..1} \\
 1 \overline{) 83..6..1..5}
 \end{array}$$

There is gained by trading with a Ship £120¹⁴ now
suppose that $\frac{1}{4}$ of her belongs to S, $\frac{3}{8}$ to C, $\frac{1}{8}$ to D
and the rest to B what must ^{each} have of the gain

Answer

Miscellaneous Questions

Answer S £30.3.6; D £45.5.3; V £15.1.9; W £30.3.6

$$\begin{array}{r} 4 \overline{) 120.14} \\ \underline{30.3.6} \end{array}$$

$$\begin{array}{r} 120.14 \\ 8 \overline{) 362.2} \\ \underline{45.5.3} \end{array}$$

$$\begin{array}{r} 8 \overline{) 120.14} \\ \underline{15.1.9} \end{array}$$

$$\begin{array}{r} 45.5.3 \\ 30.3.6 \\ \underline{15.1.9} \end{array}$$

$$120.14 - 90.10.6 = 30.3.6$$

Ans Apothecary mixes 2 3 5 3 of Syrup with 3 3 4 3 of rectified Spirits of wine and also 5 3 2 15 gr of the bark with 4 3 3 1 3 8 gr of mint water how much do all these weigh Answer 11 3 2 3 1 3 3 gr

$$\begin{array}{r} 3 \quad 3 \quad 3 \quad \text{gr} \\ 2 \quad 5 \quad 0 \quad 0 \\ 3 \quad 4 \quad 0 \quad 0 \\ 0 \quad 5 \quad 2 \quad 15 \\ 4 \quad 3 \quad 1 \quad 8 \\ \hline 11 \quad 2 \quad 1 \quad 3 \end{array}$$

A Gentleman has an Estate consisting of 1200 1/2 acres what is his yearly and daily income at 3 3/4 for every square foot Answer £3000 1 5 yearly £84 3 10 3/4 daily

$$\begin{array}{r} 1200.5 \\ 2 \overline{) 4800.2} \\ \underline{40} \\ 800.2 \\ 4 \overline{) 19200.80} \\ \underline{4800.20} \\ 12000.5 \\ 24 \overline{) 60002.5} \\ \underline{36000.1} \\ 2400.5 \\ 365 \overline{) 30001.3782} \\ \underline{2920} \\ 801 \\ 230 \\ \underline{710} \\ 1420 \overline{) 3} \\ \underline{1095} \\ 335 \end{array}$$

$$\begin{array}{r} 330 \\ 3 \overline{) 3960.10} \\ \underline{365} \\ 310 \\ 3 \overline{) 1240.5} \\ \underline{1095} \\ 145 \\ 5 \overline{) 145} \\ \underline{30} \\ 115 \end{array}$$

Miscellaneous Questions

There is a lodging of 5 rooms the circumference of the first is 95 feet 7 in. of the second 84 feet 9 in of the third 79 feet 11 in. of the fourth 71 feet 6 in. and of the fifth 59 feet: the height of each room is 10 ft 8 in. how many yards of paper 32 $\frac{1}{2}$ in. will paper the Lodging. Ans 512 yds 35 in

$$\begin{array}{r}
 3\frac{1}{4} \text{ in} \\
 95 \text{ ft } 7 \\
 84 \text{ ft } 9 \\
 79 \text{ ft } 11 \\
 71 \text{ ft } 6 \\
 59 \text{ ft } 0 \\
 \hline
 390 \text{ ft } 9 \\
 10 \text{ ft } 8 \\
 \hline
 390 \text{ ft } 6 \\
 260 \text{ ft } 6 \\
 \hline
 4168 \text{ ft } 0 \\
 12 \\
 \hline
 32\frac{1}{2} \text{ } 50016 \\
 65 \overline{) 100032} \quad 2 \\
 \underline{65} \quad 350 \quad 2 \\
 \underline{325} \quad 25 \\
 \underline{25} \quad 3 \\
 \underline{3} \quad 2 \\
 \underline{2} \quad 0 \\
 \underline{0} \quad 62 \\
 \underline{12} \quad 50 \\
 \underline{50} \quad 2 \\
 \underline{2} \quad 44 \\
 \underline{44} \quad 11 \\
 \underline{11} \quad 3 \\
 \underline{3} \quad 29 \\
 \underline{29} \quad 65
 \end{array}$$

How many allowances for Seamen each 7oz 14 dr. may be cut out of 3 cheeses each weighing 17 lb 10 $\frac{1}{2}$ oz Answer

261846

Extended on next page

Miscellaneous Questions

$$\begin{array}{r}
 lb. \quad oz. \quad dr \\
 17 \text{ lb } 10 \text{ oz } 8 \text{ dr} \\
 \hline
 2826 \\
 \hline
 4520 \\
 \hline
 43 \\
 \hline
 13560 \\
 \hline
 16 \text{ lb } 14 \text{ oz } 16 \text{ dr } 31640 \\
 \hline
 126 \overline{) 32996.0 / 2618} \\
 \underline{252} \\
 779 \\
 \underline{756} \\
 236 \\
 \underline{126} \\
 1100 \\
 \underline{1008} \\
 92 \\
 \underline{126} \quad 46 \\
 69
 \end{array}$$

A Draper sells Cloth for £350 and gains after the rate of £10 per cent what was the principal and clear gain. Answer Principal £318.3.7½ s. Gain £31.16.4½ s.

$$\begin{array}{r}
 £ \quad £ \quad £ \\
 100 : 100 :: 350 \\
 \hline
 10 \\
 110 \\
 \hline
 350 - 318.3.7\frac{1}{2} \frac{6}{11} = 31.16.2\frac{1}{4} \frac{5}{11}
 \end{array}$$

A and B venturing equal sums of ^{money} clear by joint trade £154 by agreement A was to have 18 per cent because he spent his time in the execution of the project. And B was only to have 15 per cent what was A allowed for his trouble. Answer £35.10.9¼ 12/3

Miscellaneous Questions

$$\frac{8}{5} \div \frac{13}{13} : \frac{1}{154} :: \frac{8}{5} \div \frac{33}{33}$$

$$\begin{array}{r} 154 \\ \times 35 \\ \hline 770 \\ 4620 \\ \hline 5390 \end{array}$$

A Grocer bought an equal quantity of Sugar Tea and Tobacco for £704.3.4 he gave 10 $\frac{1}{2}$ per pound for the Sugar, 5/9 per lb for the Tea and 1/8 $\frac{1}{2}$ per lb for the tobacco Demand how many pounds he had of each sort Answer 1690 lb of each

$$\begin{array}{r} 10\frac{1}{2} \\ 5\frac{1}{9} \\ 1\frac{1}{8\frac{1}{2}} \\ \hline 8\frac{1}{4} \\ \hline 1690 \end{array}$$

$$\begin{array}{r} £704.3.4 \\ \times 20 \\ \hline 140832 \\ \hline 169000 \\ \hline 1690 \end{array}$$

A Cheese Monger bought 650 cheeses weighing one more than another 10 lb each which cost him 80 guineas: now he sold them by retail in his shop for 3 $\frac{1}{2}$ per lb. Demand how many pounds he had of each sort. Ans what he gained or lost by them Answer he gained £10.5.10

Miscellaneous Questions

$$\begin{array}{r}
 \text{lb} \quad \text{d} \quad \text{lb} \\
 1 : 3\frac{1}{2} :: 10 \\
 \hline
 14 \quad 650 \\
 \hline
 6500 \\
 \hline
 26000 \\
 \hline
 6500 \\
 \hline
 491000 \\
 \hline
 1922750 \\
 \hline
 20189510 \\
 \hline
 941510 \\
 \hline
 84000 \\
 \hline
 101510
 \end{array}$$

Guin
801
2010810
84

A Tobacconist sent abroad 20 hogsheads of tobacco each weighing 11 cwt 3 qrs and sold them at the rate of £7.10 per cwt his correspondent remitted him in part payment 1500 guineas: I demand the balance. Answer £187.10

$$\begin{array}{r}
 \text{Cwt} \quad \text{lb} \quad \text{Cwt qrs} \quad \text{Guin} \\
 1 : 7.10 :: 11.3 \\
 \hline
 4 \quad 150 \quad 4720 \\
 \hline
 940 \\
 \hline
 150 \\
 \hline
 47000 \\
 \hline
 940 \\
 \hline
 41000 \\
 \hline
 2035250 \\
 \hline
 176210 \\
 \hline
 15730 \\
 \hline
 218710
 \end{array}$$

Guin
1500
21
2031500
1575

A Wine-Cooper imported 18 pipes of wine (each 126 gal.) which cost him at first purchase £549.10.6 the freight of it cost him £33.12 Customs £6.1 Loading and unloading carts and Porters £17.6.6 I demand what this wine stood him per

Miscellaneous Questions

per gallon. Answer £0.5.10

$$\begin{array}{r}
 549^{\circ} 10' 6'' \\
 33^{\circ} 12' 0'' \\
 61^{\circ} 1' 0'' \\
 17^{\circ} 6' 6'' \text{ Gal} \\
 \hline
 126 : 661^{\circ} 10' 0'' :: 1 \\
 18 \quad 20 \\
 1008 \overline{) 13230} 5 \\
 126 \overline{) 11340} \\
 \hline
 2268 \quad 1890 \\
 \quad 12 \\
 \hline
 22680 \overline{) 10} \\
 2268 \\
 \hline
 0
 \end{array}$$

Bought a ton of Iron and Steel there being in number 130 bars which cost me £29.3.4 there were 70 bars of steel which weighed each 8 lb and cost 5 per lb. I demand what the Iron and steel weighed each what they cost separately what the Iron cost per lb and what each bar weighed one with another. Answer There were 15 cwt of Iron and 5 cwt of steel the iron cost £17.10 and the steel cost £11.13.4 and each bar of iron weighed 28 lb and cost 2 1/2 pence

$$\begin{array}{r}
 170 \\
 20 \\
 \hline
 150 \\
 4 \overline{) 560} \\
 4 \overline{) 80} \\
 4 \overline{) 20} \\
 \hline
 5
 \end{array}$$

$$\begin{array}{r}
 29^{\circ} 3' 4'' \\
 11^{\circ} 13' 4'' \\
 \hline
 17^{\circ} 10' 0''
 \end{array}$$

$$\begin{array}{r}
 29^{\circ} 3' 4'' \\
 11^{\circ} 13' 4'' \\
 \hline
 17^{\circ} 10' 0''
 \end{array}$$

$$\begin{array}{r}
 17^{\circ} 10' 0'' \\
 4 \overline{) 68} \\
 4 \overline{) 26} \\
 \hline
 60 \quad 356 \\
 25 \quad 356 \\
 \hline
 1680 \overline{) 4260} 2 \\
 336 \\
 84 \\
 \hline
 336 \overline{) 1} \frac{1}{2} \\
 336 \\
 \hline
 0
 \end{array}$$

$$\begin{array}{r}
 130 \\
 70 \text{ cwt Bars} \\
 \hline
 60 : 15 :: 1 \\
 4 \\
 \hline
 60 \overline{) 28} \\
 60 \\
 \hline
 28
 \end{array}$$

Miscellaneous Questions

Bought 1000 ell of Holland by the Flemish ell and paid down £90 how must I charge it per ell English to gain £10 upon the whole Answer $3\frac{1}{4}$

$$\begin{array}{r} \text{Ell Flem } 90 \quad \text{Ell Eng.} \\ 1000 : 100 :: 5 \\ \hline 9000 \end{array}$$

A Butcher buys an Ox for £10.16 and after feeding him with 24 pecks of oats at 18s per quarter and 20 trusses hay at 1s slaughters him and sells the beef being 36 stones at 5½ per lb 6 stones tallow at 7½ per lb allowing 14 lb per stone and the hide for £1.5 Required his gain or loss

Answer Gain £2.8.16

$$\begin{array}{r} 24 \text{ pks} \quad 18 \text{ s} \\ 1:18::24 \\ \hline 8 \\ 8 \\ 32 \end{array}$$

$$\begin{array}{r} 20 \text{ trusses} \quad 1 \text{ s} \\ 1:1::20 \\ \hline 20 \\ 20 \\ 40 \end{array}$$

$$\begin{array}{r} 4 \text{ } 4 \text{ } 3 \text{ } 2 \\ 8 \text{ } 1 \text{ } 0 \text{ } 8 \\ \hline 13 \text{ } 6 \end{array}$$

$$\begin{array}{r} 10 \text{ } 16 \text{ } 0 \\ 1 \text{ } 6 \text{ } 8 \\ 0 \text{ } 13 \text{ } 6 \\ \hline 12 \text{ } 16 \text{ } 2 \end{array}$$

$$\begin{array}{r} 36 \text{ stones} \quad 5 \text{ } 1/2 \text{ s} \\ 1:5\frac{1}{2}::36 \\ \hline 4 \\ 22 \end{array}$$

$$\begin{array}{r} 6 \text{ stones} \quad 7 \text{ } 1/2 \text{ s} \\ 1:7\frac{1}{2}::6 \\ \hline 4 \\ 22 \end{array}$$

$$\begin{array}{r} 4 \text{ } 1 \text{ } 1 \text{ } 0 \text{ } 8 \text{ } 8 \\ 12 \text{ } 2 \text{ } 7 \text{ } 7 \text{ } 2 \\ 20 \text{ } 2 \text{ } 3 \text{ } 1 \\ \hline 11 \text{ } 1 \text{ } 0 \\ 2 \text{ } 9 \text{ } 0 \\ 1 \text{ } 5 \text{ } 0 \\ 13 \text{ } 5 \text{ } 0 \\ 12 \text{ } 16 \text{ } 2 \\ \hline 2 \text{ } 8 \text{ } 10 \end{array}$$

$$\begin{array}{r} 12 \text{ } 5 \text{ } 8 \text{ } 8 \\ 20 \text{ } 4 \text{ } 9 \\ \hline 2 \text{ } 9 \end{array}$$

Miscellaneous Questions

A Tradesman engages an Apprentice for 5 years and receives £25 of apprentice fee. He agrees to maintain him, the expense of which is reckoned at $\frac{1}{8}$ ^d per day and allow him £3 each of the three first years £5 the fourth, and £8 the fifth for clothes. Now if nothing be reckoned for his work the first year but the 2nd year the value of it amounts to £6 the 3rd year to £12 and the two remaining years always to £6 more than the year preceding, what does the master gain or lose by his service. Answer he gains £2.3.4

| | |
|-------|---------|
| day | years |
| 1:8:: | 5 |
| | 365 |
| | 1825 |
| 12 | 14600 |
| 20 | 1216.8 |
| | 60.16.8 |

| |
|---------|
| £ |
| 333 |
| 5 |
| 8 |
| 22.0.0 |
| 60.16.8 |
| 82.16.8 |

| |
|---------|
| 25.0.0 |
| 6.0.0 |
| 12.0.0 |
| 18.0.0 |
| 24.0.0 |
| 85.0.0 |
| 82.16.8 |
| 2.3.4 |

I Bought Stockings in London at $\frac{3}{10}$ per pair and sold them afterwards in Dublin for $\frac{5}{6}$ in remitting my

Miscellaneous Questions

my money home; I lost $8\frac{1}{2}$ per cent and the charges attending the freight &c of the stockings at an average was $\frac{1}{12}$ per pair. Pray what did I gain or lose per cent by them? Answer I gained $\pounds 27.7.4\frac{1}{4}$ per cent

$$\begin{array}{r}
 \pounds 10.12.6 \\
 \pounds 12.11.2 \\
 \hline
 19.0
 \end{array}
 \quad
 \begin{array}{r}
 \pounds 5.6.0 \\
 \pounds 12.12.0 \\
 \hline
 17.8.0
 \end{array}
 \quad
 \begin{array}{r}
 100.0.0 \\
 8.6.8 \\
 \hline
 91.13.4 \\
 20 \\
 \hline
 1833 \\
 12 \\
 \hline
 22000 \\
 88000 \\
 \hline
 528000 \\
 528000 \quad 12 \\
 \hline
 5808000 \\
 37.0.0.0 \\
 \hline
 108 \\
 95 \\
 \hline
 130 \\
 114 \\
 \hline
 166 \\
 152 \\
 \hline
 84 \\
 32 \frac{1}{2} \\
 19 \frac{1}{2} \\
 \hline
 19
 \end{array}$$

Divide $\pounds 43.12.9$ among 7 men 9 women and three Boys; and give a Woman $\frac{3}{5}$ of a Mans share and a Boy $\frac{6}{7}$ of a Woman? Answer A Boys share $\pounds 1.12.2\frac{1}{4}$ A Womans $\pounds 1.17.6\frac{1}{2}$ A Mans $\pounds 3.2.7\frac{1}{4}$

Miscellaneous Questions

$$\frac{3}{21} \times \frac{6}{7} \times \frac{3}{5} = \frac{18}{35}$$

| | | |
|---------|--------|---------------------|
| 1 Boys | Shares | $3 \times 18 = 54$ |
| 1 Woman | | $9 \times 21 = 189$ |
| 1 Man | | $7 \times 35 = 245$ |
| | | <u>488</u> |

$$488 : 13 : 12 : 9 :: 54$$

$$\begin{array}{r} 488 \overline{) 13} \\ 104 \overline{) 13} \\ 418 \overline{) 13} \\ 52 \overline{) 13} \\ 565 \overline{) 13} \\ 488 \overline{) 13} \\ 77 \overline{) 13} \\ 488 \overline{) 13} \\ 2834 \overline{) 13} \\ 2440 \overline{) 13} \\ 4342 \overline{) 13} \\ 3904 \overline{) 13} \\ 438 \overline{) 13} \\ 1752 \overline{) 13} \\ 1464 \overline{) 13} \\ 288 \overline{) 13} \\ 488 \overline{) 13} \end{array}$$

Boy's Share

Woman's do

Man's do

A Person paved a Courtyard 42 feet 9 inches in front and 68 feet 6 inches in depth and in this he laid a Foot path the depth of the Court of 5 Feet 6 inches in breadth the Foot path is laid with Purbeck Stone at 3/6 per yard and the rest with Pebbles at 3/- per yard what will the whole come to. Answer £49 17 0 1/2 3

Miscellaneous Questions

$$\begin{array}{r}
 \text{Ft in sec} \\
 42'' \quad 9'' \quad 0 \\
 68'' \quad 6'' \quad 0 \\
 \hline
 2907'' \quad 0'' \quad 0 \\
 21'' \quad 4'' \quad 6 \\
 \hline
 2928'' \quad 4'' \quad 6 \\
 \text{Yd } \mathcal{L} \quad 2928'' \quad 4'' \quad 6 \\
 6 : 3 :: 2357'' \quad 4'' \quad 6 \\
 \hline
 30619 \\
 92 \\
 1082 \\
 1296 \quad 1102302 \quad 850 \\
 10368 \\
 650 \\
 6480 \\
 \hline
 702 \\
 12 \\
 \hline
 8424 \\
 7776 \\
 648 \\
 4 \\
 \hline
 2592 \\
 2592
 \end{array}$$

$$\begin{array}{r}
 \text{Ft in} \\
 68'' \quad 6 \\
 342'' \quad 6 \\
 34'' \quad 3 \\
 \hline
 376'' \quad 9 \\
 \text{Yd } \mathcal{L} \quad 376'' \quad 9 \\
 6 : 3 :: 376'' \quad 9 \\
 \hline
 12 \quad 42 \quad 4521 \\
 92 \quad 42 \quad 4521 \\
 108 \\
 9042 \\
 18084 \\
 9 \quad 189882 \\
 12 \quad 21098 \\
 12 \quad 1758 \\
 20 \quad 1466 \\
 \hline
 7'' \quad 6'' \quad 6'' \quad \frac{2}{3} \\
 \mathcal{L} \quad 42'' \quad 10'' \quad 6'' \quad \frac{1}{2} \\
 \hline
 \mathcal{L} \quad 49'' \quad 17'' \quad 0'' \quad \frac{1}{2} \quad \frac{2}{3}
 \end{array}$$

Suppose $\mathcal{L} 2$ and $\frac{2}{3}$ of $\frac{1}{3}$ of a pound sterling will buy 3 yds and $\frac{2}{3}$ of $\frac{2}{3}$ of a yard of cloth how much will $\frac{3}{4}$ of a yard cost. Answer $9\frac{1}{2}$

$$\begin{array}{r}
 \text{Yds} \quad \frac{2}{3} \times \frac{3}{5} \\
 15 \\
 51 \\
 15 \\
 \hline
 15 : 51 :: 3 : 4 \\
 51 \\
 24 \\
 204 \\
 102 \\
 1224 \\
 4896 \\
 \hline
 2295 \\
 20 \\
 459009 \\
 44064 \\
 1836 \\
 12 \\
 220324 \\
 19584 \\
 24484 \\
 9792 \\
 9792
 \end{array}$$

Mental Arithmetic

It may be useful to be able to recollect the squares of all the numbers to 20.

| | | | | | | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|
| Numbers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Squares | 1 | 4 | 9 | 16 | 25 | 36 | 49 | 64 | 81 | 100 | 121 | 144 |
| Numbers | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | |
| Squares | 169 | 196 | 225 | 256 | 289 | 324 | 361 | 400 | | | | |

Pence Table Enlarged.

| d | | p | s | d | | p | s | d |
|-----|----|---|----|----|------|----|---|------|
| 150 | == | " | 12 | 6 | 240 | == | 1 | " |
| 156 | == | " | 13 | " | 246 | == | 1 | " 6 |
| 160 | == | " | 13 | 4 | 252 | == | 1 | 1 " |
| 165 | == | " | 13 | 9 | 258 | == | 1 | 1 6 |
| 168 | == | " | 14 | " | 264 | == | 1 | 2 " |
| 170 | == | " | 14 | 2 | 270 | == | 1 | 2 6 |
| 175 | == | " | 14 | 7 | 276 | == | 1 | 3 " |
| 180 | == | " | 15 | " | 282 | == | 1 | 3 6 |
| 186 | == | " | 15 | 6 | 288 | == | 1 | 4 " |
| 190 | == | " | 15 | 10 | 294 | == | 1 | 4 6 |
| 195 | == | " | 16 | 3 | 300 | == | 1 | 5 " |
| 200 | == | " | 16 | 8 | 400 | == | 1 | 6 4 |
| 204 | == | " | 17 | " | 500 | == | 2 | 1 8 |
| 210 | == | " | 17 | 6 | 600 | == | 2 | 10 " |
| 216 | == | " | 18 | " | 700 | == | 2 | 18 4 |
| 220 | == | " | 18 | 4 | 800 | == | 3 | 6 8 |
| 225 | == | " | 18 | 9 | 900 | == | 3 | 15 0 |
| 230 | == | " | 19 | 2 | 960 | == | 4 | " " |
| 235 | == | " | 19 | 7 | 1000 | == | 4 | 3 4 |

Mental Arithmetic

It will be easy with very little practise to find the value of any number that is within the limits of the table provided the table itself be committed to memory; thus if I wish to know the Shillings &c of 197 pence it instantly occurs, that 195 pence is 16/3 therefore 197^d is 16/5. Again suppose the Sum 456^d, 400^d is £13.4 and 56 pence being 4/8 the sum is £1.18; or dividing mentally 456 by 12 we see the quotient is 38 £1.18. Again suppose the sum to be 849 pence by the table 800 pence is £3.6.8 to which is to be added 49 pence is 4/1 the sum £3.10.9 or by division 849^d = 70/- and 9^d over.

Ex. $\frac{465}{15} = 31; \frac{870}{16} = 54 \text{ and } 6 \text{ over}; \frac{1664}{16} = 104; \frac{1444}{18} = 80 \text{ and } 4 \text{ over and so of the others}$

Required the questions and remainders of the following expressions

$\frac{856}{11} \quad \frac{987}{12} \quad \frac{179}{13} \quad \frac{987}{16} \quad \frac{458}{15} \quad \frac{213}{14} \quad \frac{984}{19} \quad \frac{1152}{18}$

Required the answer of the following Questions

How much is Pence

| Pence | £ s d | Pence | £ s d | Pence | £ s d | Pence | £ s d |
|-------|--------|-------|---------|-------|---------|-------|--------|
| 256 | 1.1.4 | 987 | 4.2.3 | 658 | 2.14.10 | 186 | 0.18.6 |
| 564 | 1.7.0 | 395 | 1.12.11 | 164 | 0.18.8 | 732 | 3.1.0 |
| 314 | 1.6.2 | 173 | 0.14.5 | 843 | 3.10.3 | 857 | 3.11.5 |
| 849 | 3.10.9 | 429 | 1.15.9 | 415 | 1.14.7 | 980 | 4.1.8 |
| 476 | 1.19.8 | 919 | 3.16.7 | 158 | 0.13.2 | 764 | 3.3.8 |

Mental Arithmetic

Suppose the Sum to be out of the limits of the Table as 1500 pence; 1000 pence make £4.3.4; 500 pence make £2.1.8. these added together give £6.5; or he may divide the 1500^{in his mind} by 12 and find the quotient 125 = £6.5 as before.

It will be recollected, that halfpence are brought into pence by dividing by 2 and farthings by 4. thus

$$86\frac{1}{4} \text{ farth} = 216 \text{ pence} = 18\text{ s}$$

$$636 \text{ halfp} = 318 \text{ pence} = 26\text{ s } 6 = £1.6.6$$

Aliquot parts of a Guinea.

| s | d | | s | d |
|----|-----------------|---------------|---|------------------|
| 10 | 6 | $\frac{1}{2}$ | 2 | 4 |
| 7 | 0 | $\frac{1}{3}$ | 1 | 9 |
| 5 | 3 | $\frac{1}{4}$ | 1 | 6 |
| 3 | 6 | $\frac{1}{6}$ | 1 | 3 $\frac{3}{4}$ |
| 3 | 0 | $\frac{1}{7}$ | 1 | 2 |
| 2 | 7 $\frac{1}{2}$ | $\frac{1}{8}$ | 0 | 10 $\frac{1}{2}$ |
| | | | | $\frac{1}{24}$ |

We shall now proceed to illustrate the mode of Mental calculation, dividing the subject into different heads.

Problem 1st

When the quantity is any number, no greater

Mental Arithmetic

than 20 and the price in pence, not more than 20

Rule. By the multiplication table the value in pence, is instantly found and the are found by the pence Table

What is the price of 15 yds of 18 yards of Flannel at $1/4$.
Cloth at $1/11$. per yd. Answer $13/9$ Answer $\text{£}1$

17 yards of Print at $1/10$.
Answer $14/2$

20 Yards of Second Cloth
at $1/18$. Answer $\text{£}10$.

15 lb Raw Sugar at
 $1/9$. Answer $11/3$

19 Yards of Cambric at
 $1/3$ Answer $\text{£}1.0.7$

Problem 2^d If the price consists of pence & farthings

Rule 1st For $\frac{1}{4}$ add the fourth of the quantity to the value found before if there be a remainder it is farthings.

20 Yards of Bombazete
at $1/4\frac{1}{2}$. Answer $\text{£}1.3.9$

17 yards of Linen at $1/11\frac{1}{2}$.
Answer $15/16\frac{1}{2}$

Mental Arithmetic

RULE 2nd For $\frac{3}{4}$ add half of the quantity to the value found.

| | |
|---|--|
| 15 lb of Patent Starch
at $6\frac{3}{4}$ Answer £1.0.7 $\frac{1}{2}$ | 19 Penknives at $18\frac{1}{2}$
Answer £1.9.3 $\frac{1}{2}$ |
|---|--|

Rule 3rd For $\frac{3}{4}$ consider the price one farthing more than the given price & with this supposed price find the value and deduct $\frac{1}{4}$ of the quantity from the value found.

| | |
|---|--|
| 14 Yards Muslin at $15\frac{3}{4}$
Answer 18/4 | 17 Yards Check at $13\frac{3}{4}$
Answer 19/5 $\frac{3}{4}$ |
|---|--|

PROBLEM 3rd When the price is shillings and this and the quantity likewise within the limits of the Table.

RULE Multiply as before, and of the product the units place is shillings and half the other part is pounds if 1 remain add it to the figure in the units place.

| | |
|---|---|
| 15 Yards of Broad Cloth
at 18/- Answer £3.10 | 19 Yards of Pelisse Cloth at
17/- Answer £16.3 |
|---|---|

Mental Arithmetic

Problem 4th When the price contains pence as well as Shillings.

1st Rule. 1st When the number of pence is an aliquot part of a shilling. Add $\frac{1}{2}$ the quantity for 6 the $\frac{1}{3}$ for 4 the $\frac{1}{4}$ for 3 and so on; remembering that the remainder will be in pence, four pence, three pence, &c according as you divide by 2, 3, 4, &c.

18 yard of Superfine Blue Cloth at $15/6$ Answer £13.9

14 Yards Cassimere at $14/6$ Answer £12.6.6

16 Yards Superfine Green Cloth at $13/4$ Answer £10.13.4

15 lbs Gunpowder Tea at $12/8$ Answer £9.3.9

14 Ounces Silver at $9/2$ Answer £6.8.4

13 Yards of Superfine Cloth at $19/12$ Answer £12.8.7½

2nd Rule. 2nd When the number of pence is not an aliquot part of a Shilling.

Rule. 2nd Find for the Shillings and then for the pence and add the sums together.

Mental Arithmetic

15 Yards of Broad Cloth
at $14\frac{1}{4}$ Answer £10.8.9

18 Yards of Brown Cloth at
 $15\frac{1}{11}$ Answer £14.6.6

14 Cwt Rice at $17\frac{1}{11}$ Answer £12.11.8 $\frac{1}{2}$

We proceed in a similar way when the price is nearly
one pound or nearly 1 shilling

56 pieces Dowlas at £0.2
per piece Answer £56.9.4

88 Reams Paper at $19\frac{1}{11}$ per ream
Answer £87.12.8

38 lb of Sugar at $1\frac{1}{11}$ per lb
Answer £1.14.10

38 lb of Sugar at $1\frac{1}{11}$ per lb
Answer £2.1.2

Problem 5th

When the price is an aliquot part of a Guinea

Rule. Divide the quantity by the aliquot part the ans-
wer is in guineas which are readily brought into pounds if
there be a remainder multiply it into the price

225 Gallons of Gin at $10\frac{1}{6}$ pp. 95
Gallon? Answer £118.2.6

Pocketbooks at $7\frac{1}{2}$ Each
Answer £33.5

Mental Arithmetic

58 Sledgers at $5/3$ Each
Answer £154.6

98 Yards of English Carpet at
 $3/6$ per Yd. Answer £17.3

125 Reticules at $3/-$ Each
Answer £18.15

49 Pipes at $2/7\frac{1}{2}$ Each
Answer £6.8.7 $\frac{1}{2}$

112 Bottles of Whisky at $2/4$
per Bottle Answer £13.1.4

94 Kid Gloves at $1/9$ per pair
Answer £8.4.6

142 lbs of Black pepper at
 $1/6$ Answer £10.13

148 lb of Sugar Candy at $1/3\frac{3}{4}$
Answer £9.14.3

268 lb of Fresh Butter
at $1/2$ Answer £15.12.8

99 lbs of Salt Butter
at $10\frac{1}{2}$ Answer £4.6.7 $\frac{1}{2}$

A. Method will instantly present itself when the price is nearly but not quite an aliquot part of a Guinea
Suppose 54 Hats at $7/2$ then it will be. Answer £19.7

Mental Arithmetic

45 Stones of Candle
at 10^s. Answer £24

64 Ready made Shirts at
5^s 4. Answer £17.1.4

28 pair of Shoes at
3^s 1. Answer £4.6.4

160 pair of Stockings at 2^s 8.
Answer £21.6.8

Problem. 6th When the quantity is 12

Rule. Bring the price into pence, which is the answer
in shillings

12 Yards Silk at 5^s 9
Answer £3.9

12 pair of Shoes at 4^s 8?
Answer £2.16

12 Yards of Broad Cloth at £1.4.6 Answer £4.14

If the quantity is any multiple of 12 as 2, 3, 4, &c; Find as
before, and multiply the sum by the given multiple.

72 Plates at 3^s 2 Each 144 lb of Bohea tea at 4^s 8
Answer £11.8

per lb. Answer £33.12

Mental Arithmetic

180 Pair of Silver Buckles at 5/- per pair Answer £12-0

20 Reams of Post paper at 18/- per Ream Answer £18-11-8

Problem VII. When the quantity is 20.

Rule: The shillings of the price is the answer in £ if there be 6 add 10/-; if 4 add 5/-; if 3 add 5/- and so on

20 Chests at 9/- each Answer £9-10

20 Gallons of Whisky at 5/- Answer £5-6-8

20 Loaves of Sugar at 7/-3 Each Answer £7-5

20 Pieces of Fustian at 9/-8 Answer £9-13-4

If the quantity be any multiple of 20, as, 40, 60, 100, 180, &c then find the value for 20, and multiply by 2, 3, 5, 8, &c

160 Gold Breastpins at 5/-6 Answer £4-4

240 Pair of Slippers at 3/-9 Answer £4-5

360 pair of Boots at 7/-2 Answer £12-9

There being 240^d in a £ the answer in the last example but one is found by only bringing the price into pence. In this example there are 45 in 3/-9 and

Mental Arithmetic

and the answer is £45, so
of any other question as 240
pair of Stockings at $7/7 = £91$

In the next example 360
the answer is as many pounds
and half as many, as there
are pence in the price, thus
 $7/2 = 86$; therefore the answer
is $£86 + 43 = £129$ If the

quantity were 120, then the
answer would be as many
pounds as there are pence
thus 120 yds. of Cloth at $5/5 =$
 $= \frac{65}{2} = £32.10$ In the same
manner the value of any
aliquot part or of any mul-
tiple of 240 may be found.

By the same method
we

we calculate by guineas when
the quantity is 252 or any multiple
or aliquot part of the number, thus
252 pair of Stockings at $4/6$ per pair
will come to 54 guineas or $£56.4$

126 Pair of Shoes at $5/8$ per pair
Answer 34 guineas = $£35.14$

756 Yards of Lace at $3/2$ per yard
Answer 104 guineas = $£109.4$

54 Yards of Serge at $7/9$ per yd
 $£2.0.6$

68 pair of Mens Mitts at $1/3$
Answer $£4.5$

120 Yards Narrow Cloth at $5/9$
Answer $£34.10$

Mental Arithmetic

144 lbs of Sugar at $1/1$

Answer £7.16.~

189 lb of Green Tea at $10/6$

Answer £99.4.6

196 lb of Coffee at $1/11$ per lb

Answer £18.15.8

124 Yds of Drugget at $2/7\frac{1}{2}$

Answer £16.5.6

480 Yds of Broad Cloth

at £1.7.6 Answer £660

960 lb of Black Tea at $5/10$

Answer £280

96 Pair of Gloves at $3/5$

Answer £16.8

672 Yards of Flannel at $3/5$

Answer £114.16.~

31 Yards of Calico at $4/8$

Answer £7.4.8

210 Yards of Print at $4/9$

Answer £57.~.~

176 Yards of Fustian at $5/0\frac{1}{2}$

Answer £44.7.4

252 Yards of Muslin at $3/11$

Answer £49.7.~

Mental Arithmetic

50 lb of Loaf Sugar
at 11/1 Answer £ 27.6

64 lb of Rice at 9/6 1/2 per lb.
Answer £ 1.14.8

224 Yard Superfine brown 120 Pair of Wellington Boots.
Cloth at 19/6 Answer £ 218.8. at £ 1.3.9 Answer £ 142.10

142 Yards Serge at 2/8
Answer £ 18.18.8

88 lb of Gunpowder at 10/1
Answer £ 44.7.4

153 Yards Calico at 6/7
Answer £ 30.7.3

85 Yards of Superfine Cloth
at £ 1.0.2 Answer £ 85.14.2

40 lb 8 1/2 of Beef at 4/8 1/2
per lb Answer £ 18.8.4

10 pair of Silk Stockings
at 14/6 1/2 Answer £ 7.5.5

19 lb of Candle at 10/4
Answer £ 0.16.2 3/4

9 lb 8 1/2 of Pepper at 2/9 1/2 per lb.
Answer £ 1.6.6 1/2

Promiscuous Questions

A Gardener receives £20.10 of Yearly Wages besides a free House at £2.50 Coal & Candles value £1.17.6; garden articles value 13/4; 4 1/2 Bolls meal at 16s per boll; and a Cows Grass valued at 1 Guinea and half how much do these amount to and how much would he gain or lose if instead of the above articles he received 2/6 Each working day throughout the Year. Answer £30.12.4 amount £8.10.2 Gain

£ 0.16.8
3.6.8
0.8.4
3.15.0 Meal

£ 20.10.0
2.5.0
1.17.6
0.13.4
3.15.0
1.11.6
Amount 30.12.4

Days
365
52
313
2
6 1/2 62.6
15.6
20 782.6
39.2.6
30.12.4
Gain 8.10.2

How much ground In a road 35 Feet a one mile long
Answer 4 ac 38 po. 23 yds 3 ft.

1760
1760
3280
35
26400
15840
9 154800
1840 20533.3
19360
1173.7
4692.0
187680
14520
424800

42480
38720
37680 1/2
112800
940
113740 23
9680
169400
14520
2420 2420 1/2
2840

Promiscuous Questions

A Poulterer buys 15 Geese at $2/9$ each, 11 Wild Ducks at $1/4\frac{1}{2}$; 13 F tame Ducks at $1/1\frac{1}{2}$; 7 Hens at $10\frac{1}{2}$ and 4 $\frac{3}{4}$ Dozens of Pigeons at $3/10$ per dozen how much change should he have out of 5 Guineas. Answer $9/8$

$$\begin{array}{r} \text{£ } 0..2..9 \\ 0..13..9 \\ \hline 2..1..3 \end{array}$$

$$\begin{array}{r} \text{£ } 0..1..4\frac{1}{2} \\ 0..15..1\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \text{£ } 0..1..1\frac{1}{2} \\ 0..14..7\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \text{£ } 0..0..10\frac{1}{2} \\ 0..6..1\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{2} \frac{1}{2} \text{ £ } 0..3..10\frac{1}{4} \\ \frac{1}{4} \frac{1}{2} \begin{array}{r} 0..15..4 \\ 0..1..11 \\ 0..0..11\frac{1}{2} \\ \hline 0..18..2\frac{1}{2} \end{array} \end{array}$$

$$\begin{array}{r} \text{£ } 2..1..3 \\ 0..15..1\frac{1}{2} \\ 0..14..7\frac{1}{2} \\ 0..6..1\frac{1}{2} \\ 0..18..2\frac{1}{2} \\ \hline 4..15..4\frac{1}{2} \end{array}$$

$$\begin{array}{r} \text{£ } 5..5..0 \\ 4..15..4 \\ \hline 0..9..8 \end{array}$$

Bought for ready Money 37 cwt. 3 qrs of Sugar at $67/6$ per cwt; 14 Cwt 2 qrs 17 lb of do at $65/9$, 25 firkins of Orkney butter wt 15 cwt 15 lb at $£ 4..17$ and 3 cwt 1 qr of Tobacco at $2/8$ per lb required the price of the whole
Answer $£ 297..10..1\frac{1}{2}$

Extended on next page

Promiscuous Questions

$$\begin{array}{r} \text{Cwt of } 2 \text{ cwt gr} \\ 1 : 6 \frac{1}{2} : 6 :: 37 \cdot 3 \\ \hline 4 \quad 810 \end{array}$$

$$\begin{array}{r} 1510 \\ 1208 \\ \hline 4 \quad 122310 \\ 12 \quad 30577 \frac{1}{2} \\ 20 \quad 2548 \cdot 1 \\ \hline 127 \cdot 8 \frac{1}{2} \end{array}$$

$$\begin{array}{r} \text{Cwt of } 1 \text{ cwt gr lb} \\ 1 : 65 \cdot 9 : 14 \cdot 2 \cdot 17 \\ \hline 4 \quad 28 \quad 789 \\ 112 \end{array}$$

$$\begin{array}{r} 58 \\ 28 \\ \hline 471 \\ 117 \\ \hline 1641 \\ 789 \\ \hline 14769 \\ 13128 \\ \hline 11487 \\ 1294749 \\ \hline 112 \quad 11560 \\ 144 \quad 20963 \cdot 4 \\ 112 \quad 48 \cdot 3 \cdot 4 \\ \hline 694 \\ 566 \end{array}$$

$$\begin{array}{r} \text{Cwt of } 1 \text{ cwt gr lb} \\ 1 : 4 \cdot 17 : 15 \cdot 0 \cdot 15 \\ \hline 4 \quad 20 \\ 1 \quad 97 \\ 28 \\ \hline 112 \end{array}$$

$$\begin{array}{r} 60 \\ 28 \\ \hline 1685 \\ 97 \\ \hline 11865 \\ 15255 \\ \hline 164415 \\ 112 \quad 1467 \\ 524 \quad 73 \cdot 7 \\ 448 \\ \hline 761 \\ 672 \\ \hline 895 \\ 784 \\ \hline 1112 \\ 133211 \\ 112 \\ \hline 212 \\ 112 \\ \hline 100 \\ 4 \\ \hline 3003 \\ 336 \frac{1}{2} \\ \hline 64 \end{array}$$

$$\begin{array}{r} \text{Cwt of } 1 \text{ cwt gr} \\ 1 : 2 \cdot 8 : 3 \cdot 1 \\ \hline 12 \quad 13 \\ 32 \quad 28 \\ \hline 104 \\ 26 \\ \hline 364 \\ 32 \\ \hline 728 \\ 1092 \\ \hline 1211648 \\ 20 \quad 970 \cdot 8 \\ \hline 48 \cdot 10 \cdot 8 \end{array}$$

$$\begin{array}{r} 127 \cdot 8 \cdot 1 \frac{1}{2} \\ 48 \cdot 3 \cdot 1 \frac{1}{2} \\ 73 \cdot 7 \cdot 11 \frac{1}{2} \\ 48 \cdot 10 \cdot 8 \\ \hline 297 \cdot 10 \cdot 1 \frac{1}{2} \end{array}$$

A Captain of a Privateer and 56 Sailors took a prize of
 £1388.15 the Captain is to have $3 \frac{1}{2}$ Shares the sailors each a
 share

Promiscuous Questions

share what is the share of each. Answer £23..6..9½ sailors
share; £81..13..9¾ Captains &c

$$\frac{3\frac{1}{2}}{2} + \frac{56}{1} = \frac{119}{2}$$

$$\begin{array}{r} \text{£} 1388..16\frac{1}{2} \\ 119 \overline{) 24777 \text{ " } 10} \\ \underline{238} \\ 397 \\ \underline{357} \\ 400 \\ \underline{714} \\ 800 \\ \underline{714} \\ 96 \\ \underline{1152} \\ 1071 \\ \underline{84} \\ 322 \\ \underline{238} \\ 86 \\ \underline{119} \end{array}$$

$$\begin{array}{r} 23..6..9\frac{1}{2} \frac{86}{119} \\ 70 \text{ " } 0 \text{ " } 5\frac{1}{2} \frac{20}{119} \\ 11 \text{ " } 13 \text{ " } 4\frac{3}{4} \frac{43}{119} \\ \hline 81 \text{ " } 13 \text{ " } 9\frac{3}{4} \frac{63}{119} \end{array}$$

A Farmer planted 12 acres with potatoes at the rate of a peck for 3 falls the rent of the ground is 4 guineas per acre; the expence of plowing is 5/6 per acre seed 11/4 per boll 30 carts of Dung per ac. at 3/- Expence of planting the whole is £12..14..2 double hoeing 24/- per acre; Digging then and cartage 8/- per boll produce at an average a boll for each peck planted He sells 165 bolls at 9/6; 250 at 9/- 126 at 8/6 & the remainder at 7½ per pk. required his gain or loss Ans £115..2½ gain
Extended on next page

Promiscuous Questions

$$\begin{array}{r} \text{Fol. Ok. Ac} \\ 3:1::12 \\ \hline 480 \\ 1920 \\ 4-640 \\ \hline 4160 \\ \hline 40 \end{array}$$

$$\begin{array}{r} £ \\ 4\frac{1}{2} \\ \hline £50\frac{1}{2} \end{array}$$

$$\begin{array}{r} £ \\ 0\frac{5}{12} \\ \hline £3\frac{5}{12} \end{array}$$

$$\begin{array}{r} £ \\ 0\frac{11}{12} \\ \hline £13\frac{1}{4} \end{array}$$

$$\begin{array}{r} Ac \\ 12 \\ 30 \\ \hline 360 \end{array}$$

$$\begin{array}{r} £ \\ 1\frac{1}{2} \\ \hline £14\frac{1}{2} \end{array}$$

$$\begin{array}{r} £ \\ 22\frac{1}{4} \end{array}$$

$$\begin{array}{r} 20 \\ 1080 \\ \hline 540 \end{array}$$

$$\begin{array}{r} £ \\ 0\frac{0}{8} \\ \hline 0\frac{3}{8} \\ \hline £1\frac{6}{8} \end{array}$$

$$\begin{array}{r} £ \\ 50\frac{8}{10} \\ 3\frac{6}{10} \\ 22\frac{13}{10} \\ 54\frac{0}{10} \\ 12\frac{14}{10} \\ 14\frac{8}{10} \\ 1\frac{6}{10} \\ \hline £158\frac{16}{10} \end{array}$$

$$\begin{array}{r} B_0 \text{ of } 8 \quad B_0 \\ 1:9\frac{6}{10}::165 \\ \hline 114 \\ 1815 \\ 12 \overline{) 18810} \\ 20 \overline{) 1367\frac{6}{10}} \\ \hline £78\frac{7}{10} \end{array}$$

$$\begin{array}{r} B_0 \\ 250 \\ 9 \\ \hline 20 \overline{) 2250} \\ \hline £112\frac{10}{10} \end{array}$$

$$\begin{array}{r} 6\frac{1}{2} \overline{) 126} \\ 8 \\ \hline 1008 \\ 68 \\ \hline 2 \overline{) 1071} \\ \hline 153\frac{11}{10} \end{array}$$

$$\begin{array}{r} B_0 \quad B_0 \\ 165 \quad 640 \\ 250 \quad 841 \\ \hline 126 \quad 99 \\ 541 \quad 40 \\ \hline 59\frac{1}{2} \\ 23\frac{6}{10} \end{array}$$

$$\begin{array}{r} 6\frac{1}{2} \overline{) 944} \\ 12\frac{1}{2} \overline{) 472} \\ \hline 118 \\ 20 \overline{) 590} \\ \hline 29\frac{10}{10} \end{array}$$

$$\begin{array}{r} £ \\ 78\frac{7}{10} \\ 112\frac{10}{10} \\ 53\frac{11}{10} \\ 29\frac{10}{10} \\ 278\frac{18}{10} \\ 158\frac{16}{10} \\ \hline 115\frac{2}{10} \text{ Gain} \end{array}$$

How many inches are there in 254 yards of lace and what will it cost at 2 $\frac{1}{2}$ for 3 of a yard. Answer 9144 in. cost £7 $\frac{1}{4}$ 1 $\frac{1}{2}$ 3

$$\begin{array}{r} 900 \\ 254 \\ 36 \\ \hline 1524 \\ 762 \\ \hline 9144 \end{array}$$

$$\begin{array}{r} 8 \quad 900 \\ 3:2\frac{1}{2}::2048 \\ \hline 70 \quad 203\frac{2}{10} \\ 3 \overline{) 20320} \\ 4 \overline{) 6773} \\ 12 \overline{) 1698\frac{1}{4}} \\ 20 \overline{) 141\frac{1}{4}} \\ \hline 7\frac{1}{4} \frac{1}{4} \frac{3}{4} \end{array}$$

How many times do the Wheels of the Mail coach between Edinburgh and London turn round, the distance being 390 miles when the distance circumference of the fore wheel measures 5

Promiscuous Questions

5 Yds. 1 foot & the hind wheel syds. 1 foot. Ans^r 128700 fore wheel 82368 hind

$$\begin{array}{r}
 200 \\
 1760 \\
 \hline
 390 \\
 158400 \\
 \hline
 5280 \\
 200 \\
 \hline
 686400 \\
 51 \\
 \hline
 3 \\
 16 \frac{1}{2} \left\{ \begin{array}{l} 2059200 \\ 314800 \\ \hline 128700 \text{ fore wheel} \end{array} \right.
 \end{array}$$

$$\begin{array}{r}
 200 \\
 1760 \\
 \hline
 390 \\
 158400 \\
 \hline
 5280 \\
 200 \\
 \hline
 686400 \\
 51 \\
 \hline
 3 \\
 25 \frac{1}{5} \left\{ \begin{array}{l} 2059200 \\ 411840 \\ \hline 82368 \text{ hind wheel} \end{array} \right.
 \end{array}$$

How much water must be added to a hogshhead which cost £38.17 to reduce it to 10/6 per gal Answer 11 gal

$$\begin{array}{r}
 \text{S 8 gal } £ \\
 10.6 : 1 :: 38.17 \\
 \hline
 126 \quad 20 \\
 774 \\
 \hline
 9324 \quad 24 \\
 882 \quad 68 \\
 \hline
 502 \quad 11 \\
 304
 \end{array}$$

A has 100 pieces of Silk worth £3 per piece but barterers them at £4 and takes their value from Bin wool at £7.10 per cwt which was only worth £6 How much wool must B give A for the Silk Whether was A or B the gainer and how much Answer B gives A 53½ cwt of wool and A gains 100

Extended on next page

$$\begin{array}{r} \text{L L L Pfs Pfs} \\ 3.4 \dots 6 \quad 100 \quad 100 \\ \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ 24 \quad 300 \quad 300 \\ \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ 8 \quad 100 \quad 100 \end{array}$$

$\frac{4}{20} \cdot 10 : 1 :: 400 \frac{0}{20}$
 $\frac{15}{1} \cdot 0$
 $\left\{ \begin{array}{l} 6 \\ 3 \end{array} \right. \begin{array}{l} 800 \frac{0}{0} \\ 160 \end{array}$
 $502 \frac{1}{3}$

$$\begin{array}{r} \text{Cut } 7^{\cdot} 10 \\ 6^{\cdot} 0 \\ \hline 1^{\cdot} 10 \\ 3^{\cdot} 20 \\ \hline 3^{\cdot} 30 \end{array} \quad \text{Cut } 53^{\cdot} 3 \\ 3^{\cdot} 3 \\ \hline 166^{\cdot} 60$$

$$\begin{array}{r} 94800 \\ 21600 \\ \hline 10080 = 20 \text{ gain} \end{array}$$

A Bankrupt is indebted to his Creditors £2980.10
his effects amount to £931.8.1½ how much can he pay
his Creditors per pound. Answer 6/8^d

$2980 : 99\frac{1}{2} : 8 : 1\frac{1}{2} :: 1$

$$\begin{array}{r} 18628 \\ 17880 \end{array} \Bigg/ 6$$

$$\begin{array}{r} 74 \\ 12 \end{array}$$

$$\begin{array}{r} 8977 \\ 8940 \end{array} \Bigg/ 3$$

$$\begin{array}{r} 37 \\ 150 \end{array}$$

150
A Bankrupt settles with his creditors at $6/8$ per pound
and clears with **B** by paying him £317.6.8 What was
the original debt. Answer £952

$$\begin{array}{r}
 608 : 1 : 317.68 \\
 \hline
 20 \\
 6346 \\
 \hline
 7616.0 \\
 \hline
 \pounds 952
 \end{array}$$

I made a purchase of 5 pieces of Holland each measuring

Promiscuous Questions

56 Flemish Ells at $3\frac{1}{2}$ per Flemish ell, what shall I gain on the whole if I sell it at $5\frac{1}{8}$ per English Ell

Answer £3.5.4

$$\begin{array}{r} \text{F.E. } £ \\ 1 : 0.3.2 :: 56 \\ \hline 0.12.8 \\ \hline 4.8.8 \\ \hline £14.6.8 \end{array}$$

$$\begin{array}{r} \text{£ E } £ \text{ s } \text{ F.E.} \\ 1 : 5.8 :: 56 \\ \hline 5.12 \\ \hline 5.68 \\ \hline 27.20 \\ \hline 54.4 \\ \hline 5.57.12.0 \\ 12.114.24 \\ 20.95.2 \\ \hline £47.12.0 \\ 44.6.8 \\ \hline £3.5.4 \end{array}$$

A Father left among five Sons £1500 in Cash and five bills of £48.10.6 each he order'd £29 to be expended on his burial, and his debts to be paid amounting to £464.10, The remainder was to be divided among the Sons the eldest son to have $\frac{1}{3}$ and the other four equal shares required the share of each. Answer £16.7.6 Eldest Sons Share; £208.3.9 each of 4 Sons Share.

$$\begin{array}{r} £1500.0.0 \\ 242.12.6 \\ \hline 1742.12.6 \\ 493.10.0 \\ \hline £1249.2.6 \end{array}$$

$$\begin{array}{r} £48.10.6 \\ 242.12.6 \\ \hline £242.12.6 \end{array}$$

$$\begin{array}{r} £ \\ 29.0.0 \\ 464.10.0 \\ \hline 493.10.0 \end{array}$$

$$\frac{1}{3} + \frac{2}{3} = \frac{3}{3}$$

$$\begin{array}{r} 1249.2.6 \\ 416.7.6 \\ \hline \end{array}$$

$$\begin{array}{r} £ \\ 1249.2.6_2 \\ 32498.5.0 \\ \hline 4832.15.0 \\ \hline £208.3.9 \end{array}$$

Promiscuous Questions

A Grocer buys 54 Chests of spice each chest weighing 4 cwt 2 qrs 14 lb gross, tare on the whole 21 cwt 3 qrs 18 lb Required the neat weight. Answer 227 cwt 3 qrs 10 lb neat

$$\begin{array}{r}
 \text{Cwt} \text{ qrs} \text{ lb} \\
 54 \times 4 \text{ cwt } 2 \text{ qrs } 14 \text{ lb} \\
 \hline
 216 \text{ cwt } 8 \text{ qrs } 56 \text{ lb} \\
 216 \text{ cwt } 8 \text{ qrs } 56 \text{ lb} \text{ gross} \\
 21 \text{ cwt } 3 \text{ qrs } 18 \text{ lb} \text{ Tare} \\
 \hline
 195 \text{ cwt } 5 \text{ qrs } 38 \text{ lb} \\
 195 \text{ cwt } 5 \text{ qrs } 38 \text{ lb} \text{ neat}
 \end{array}$$

If by selling hops at £3.10 per cwt the planter gains £30 percent; what does he gain percent when he sells the same goods for £4.5 Answer £57.17.12 1/2

$$\begin{array}{r}
 \text{£} \\
 3.10.4.5 : : 130 \\
 20 \quad 20 \\
 7.0 \quad 8.5 \\
 \hline
 105.0 \\
 105.0 \times 1.57.17.1 \frac{1}{2} \frac{6}{7} \\
 \hline
 165.00.0 \frac{6}{7} \\
 \hline
 \text{£ } 57.17.12 \frac{1}{2} \frac{6}{7}
 \end{array}$$

Divide a Guinea among 6 Recruits and a Serjaent; give the recruits equal shares and the serjaent 1 1/2 share Answer 2/9 2/3 recruits share 1/24 Serjaent share

$$\begin{array}{r}
 \frac{1 \frac{1}{2}}{7} + \frac{6}{1} = \frac{13}{2} \\
 13 \overline{) 26} \\
 26 \\
 \hline
 0
 \end{array}$$

Promiscuous Questions

A Gentleman lets a farm of 620 $\frac{1}{2}$ acres at £5 per ac. but agrees to deduct two acres from the Hundred in the measure, for enclosures how much should he charge Rent for, and what will the rent amount to. Answer 608 ac. 14 $\frac{2}{5}$ po £2084. 7. 7 $\frac{2}{5}$ amount

$$\begin{array}{r}
 \text{Ac} \quad \text{ro} \quad \text{po} \\
 620 \quad 2 \quad 0 \\
 12 \quad 1 \quad 25 \frac{2}{5} \\
 \hline
 1 \quad 15 \quad 608 \quad 0 \quad 14 \frac{2}{5} \\
 \hline
 4 \quad 20 \quad 4 \\
 40 \quad 80 \quad 2432 \\
 \hline
 160 \quad 9728 \\
 \hline
 800 \quad 48640 \\
 \hline
 2432360 \\
 3891770 \quad 20 \\
 \hline
 41350129 \quad 51687 \\
 400 \quad 2584 \quad 7 \quad 7 \quad 2 \quad 1 \\
 \hline
 135 \\
 80 \\
 \hline
 550 \\
 480 \\
 \hline
 701 \\
 1640 \\
 \hline
 612 \\
 560 \\
 \hline
 52 \\
 \hline
 1624 \quad 7 \\
 64 \\
 \hline
 256 \quad 3 \\
 240 \quad 4 \\
 \hline
 16 \quad 16 \quad 1 \\
 80 \quad 5
 \end{array}$$

A Person left £4 to 4 widows, A, B, C, and D, to A, he left $\frac{1}{2}$ to B, $\frac{1}{4}$ to C, $\frac{1}{5}$ and to D $\frac{1}{6}$; desiring that the whole might be distributed accordingly; what is the proper share of each. Answer £1.8.0 $\frac{2}{5}$ $\frac{126}{342}$ A's share £1.1.0 $\frac{2}{5}$ $\frac{180}{342}$ B's do; 10/10 $\frac{126}{342}$ C's do 14/0 $\frac{234}{342}$ D's do
 Extended on next page.

Promiscuous Questions

$$\frac{1}{3} \times \frac{1}{4} \times \frac{1}{5} \times \frac{1}{6} = \frac{120}{360}$$

$$360 : 4 :: 120$$

$$342 : 4 :: 90$$

$$\begin{array}{r} 480 \\ 342 \\ \hline 138 \\ 2760 \\ 2736 \\ \hline 24 \\ 2880 \\ 1152 \\ \hline 1020 \\ 126 \\ \hline 342 \end{array}$$

$$\begin{array}{r} 360 \\ 342 \\ \hline 18 \\ 360 \\ 342 \\ \hline 18 \\ 2160 \\ 864 \\ \hline 684 \\ 180 \\ \hline 342 \end{array}$$

$$\begin{array}{r} 342 : 4 :: 72 \\ 2880 \\ 342 \\ \hline 2340 \\ 2052 \\ \hline 288 \\ 13456 \\ 1342 \\ \hline 364 \\ 144 \\ \hline 342 \end{array}$$

$$\begin{array}{r} 342 : 4 :: 60 \\ 2400 \\ 342 \\ \hline 1380 \\ 1368 \\ \hline 12 \\ 12 \\ \hline 144 \\ 576 \\ 342 \\ \hline 234 \\ 342 \end{array}$$

What Sum will clear the weekly expences of 24 Masons at 2/6 per day; 12 Bricklayers at 2/1; 14 Labourers at 1/6; and 10 Wrights at 2/3 1/2. Answer £38. 13. 6

$$\begin{array}{r} £0. 2. 6 \\ 0. 15. 6 \\ \hline 3. 0. 6 \\ £18. 0. 0 \end{array}$$

$$\begin{array}{r} £0. 2. 4 \\ 0. 12. 6 \\ \hline £7. 10. 0 \end{array}$$

$$\begin{array}{r} £0. 1. 6 \\ 0. 9. 6 \\ \hline 3. 3. 6 \\ £6. 6. 0 \end{array}$$

$$\begin{array}{r} £0. 2. 3 \frac{1}{2} \\ 0. 13. 9 \frac{1}{2} \\ \hline £6. 17. 6 \end{array}$$

$$\begin{array}{r} £18. 0. 0 \\ 7. 10. 0 \\ 6. 6. 0 \\ \hline £31. 16. 0 \end{array}$$

Promiscuous Questions

A, B, C, and D, got a present of Guinea of which A claims $\frac{1}{2}$ B, $\frac{1}{3}$ C, $\frac{1}{4}$ and D, $\frac{1}{5}$ but find it too little it is required therefore to determine their exact shares of it. Answer $8\frac{1}{2}$ A's

share; $\frac{1}{2}$ B, $\frac{1}{3}$ C, $\frac{1}{4}$ D

$$\frac{1}{2} \times \frac{1}{3} \times \frac{1}{4} \times \frac{1}{5} = \frac{1}{120}$$

$$154 : 21 :: 60$$

$$154 : 25 :: 40$$

$$154 : 21 :: 30$$

$$154 : 21 :: 24$$

$\begin{array}{r} 1260 \\ 1232 \\ \hline 28 \\ 12 \\ \hline 336 \\ 308 \\ \hline 28 \\ 4 \\ \hline 112 \end{array}$

$\begin{array}{r} 840 \\ 770 \\ \hline 70 \\ 12 \\ \hline 840 \\ 770 \\ \hline 70 \\ 12 \\ \hline 280 \\ 135 \\ \hline 26 \end{array}$

$\begin{array}{r} 630 \\ 616 \\ \hline 14 \\ 168 \\ 154 \\ \hline 14 \\ 66 \end{array}$

$\begin{array}{r} 504 \\ 462 \\ \hline 42 \\ 12 \\ \hline 504 \\ 462 \\ \hline 42 \\ 12 \\ \hline 168 \\ 134 \\ \hline 14 \end{array}$

What difference is there between the interest and discount of £500 for 12 Years at 5 percent per annum Answer £12.10

$\begin{array}{r} 500 \\ 100 \overline{) 2500} \\ 25 \\ \hline 12 \\ \hline 300 \end{array}$

$\begin{array}{r} \text{Year} \quad \text{£} \quad \text{Years} \\ 1 : 5 :: 12 \\ \hline \text{£60} \end{array}$

$\begin{array}{r} 500 \\ 60 \\ \hline 160 : 60 :: 500 \\ 60 \\ \hline 30000 \\ 1800 \\ \hline 28200 \\ 300 - 187.10 = 112.10 \end{array}$

Promiscuous Questions

A, B, and C, agree to trade in company for 12 Months
 A, put in at first £364; and at the end of 4 Months he put in
 £40 more, B put in at first £408 and at the end of 7 Months
 he took out £86 C put in at first £148 and at the end of 3
 Months he put in £86 more, and at the end of other 5 Months he
 put in £100 more and at the end of the year their gain was £1436
 what is each man's share. Answer A's gain £336. 3. 6
 B £529. 16. 9 C £349. 19. 8

$$\begin{array}{r} \text{£} 364 \times 4 = 1456 \\ \text{40} \times 8 = 320 \\ \text{408} \times 7 = 2856 \\ \text{86} \times 5 = 430 \\ \text{148} \times 3 = 444 \\ \text{86} \times 5 = 430 \\ \text{100} \times 2 = 200 \\ \hline 2950 \end{array}$$

$$\begin{array}{r} 12104 : 1436 :: 4688 \\ \hline 28128 \\ 14064 \\ 18752 \\ 4688 \\ \hline 6731968 / 356 \\ 60520 \\ 67996 \\ 60520 \\ 64768 \\ 72624 \\ 21440 \\ \hline 42880 / 3 \\ 36312 \\ 6568 \\ 12 \\ \hline 76816 / 6 \\ 72624 \\ \hline 6192 \end{array}$$

$$\begin{array}{r} 12104 : 1436 :: 4468 \\ \hline 1436 \\ 26798 \\ 13398 \\ 17864 \\ 4488 \\ \hline 6413176 / 629 \\ 60520 \\ 36117 \\ 24208 \\ \hline 119096 \\ 108936 \\ \hline 101660 \\ \hline 203200 / 16 \\ 12104 \\ 82160 \\ 72624 \\ \hline 95376 \\ \hline 114432 / 9 \\ 108936 \\ \hline 5496 \end{array}$$

$$\begin{array}{r} 12104 : 1436 :: 2950 \\ \hline 2950 \\ 71800 \\ 12924 \\ 2872 \\ \hline 1236200 / 349 \\ 36312 \\ 60500 \\ 48416 \\ 120840 \\ 108936 \\ \hline 119040 \\ \hline 238080 / 19 \\ 12104 \\ 117040 \\ 108936 \\ \hline 8104 \end{array}$$

$$\begin{array}{r} 8104 \\ \hline 98248 / 8 \\ 96832 \\ \hline 416 \end{array}$$

Promiscuous Questions

Required the sum the difference, the product and the quotient of $\frac{3}{8}$ & $\frac{5}{9}$ Answer $\frac{67}{72}$ sum $\frac{13}{72}$ diff. $\frac{15}{72}$ pro. $\frac{27}{40}$ quo

$$\frac{3}{8} \times \frac{5}{9} = \frac{40}{72} \quad \frac{3}{8} \times \frac{5}{9} = \frac{40}{72} \quad \frac{3}{8} \times \frac{5}{9} = \frac{15}{72} \quad \frac{9}{5} \times \frac{3}{8} = \frac{27}{40}$$

If Needles be bought for 2/6 a gross how many may be sold for 4/1 to gain £20 percent Answer 4 needles

$$\begin{array}{r} 20 \frac{1}{5} \overline{) 0.2.8} \\ \underline{0.0.6} \\ 0.2.2 \end{array} \quad \begin{array}{r} 3 \frac{1}{2} \overline{) 12} \\ \underline{6} \\ 6 \end{array}$$

Seven persons A, B, C, D, E, F, and G have £99999.2 to be divided among them in such a manner that as often as A takes a guinea B is to take a mark C, ten shillings D, a noble E, a crown F, half a crown and G, a sixpence required each persons particular share Answer 33898 of each.

$$\begin{array}{r} 1.1.0 \\ 0.13.4 \\ 0.10.0 \\ 0.6.8 \\ 0.5.0 \\ 0.2.6 \\ 0.0.6 \\ \hline 2.19.0 \\ 20 \\ \hline 59 \end{array} \quad \begin{array}{r} 99999.2 \\ 20 \\ \hline 59 \overline{) 199998.2} \overline{) 33898} \\ \underline{177} \\ 229 \\ \underline{177} \\ 529 \\ \underline{472} \\ 578 \\ \underline{331} \\ 472 \\ \underline{472} \end{array}$$

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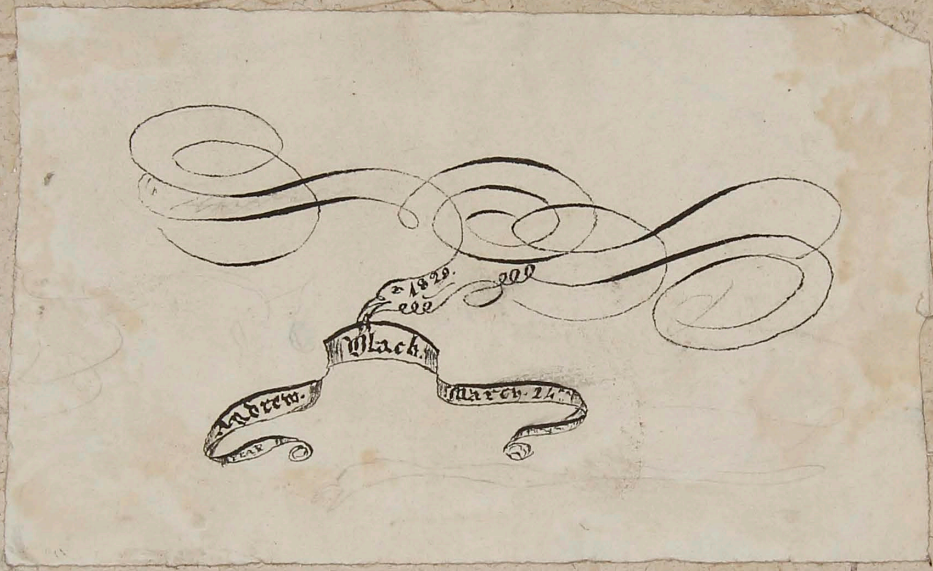
anner

C,

and

e

19 at 19





2
us after having been out eleven weeks, I heard that they had run short of provisions and also that two of her steerage passengers had died, and one while cutting capers on the bowsprit fell overboard and was drowned, our vessel was very fortunate there being no disease on board but sea sickness.

The time we lay at Pictou was spent very pleasantly I went ashore every day but one, on that day I wrote to Edinburgh you know who to and got one of the ships boats and called over to the "Royal William", a steam vessel (which was preparing to sail for London) with my letter, a newspaper for you, and two letters of Mr Black one for Janet and the other for his friends in the Isle of Wight, all of which I hope have been safely delivered, next day Jackson, Black and myself took a walk in the country it is a very woody place and the land appears to be very poor, some parts however are well cultivated and the inhabitants appear to be doing well, we went into one farm house and were well entertained by the farmer and his wife we got as much milk as we could drink and as much green peas as made a good dish, next day for dinner, both of which were a

Quebec 26th August 1833

My Dear Father

When I left Edinburgh it was my intention not to have written you from this place but an opportunity having presented itself of sending you news of my arrival by a friend of the Captain who has offered to put a letter free of expense into the post office in Britain I readily embrace it as I know my friends in Edinburgh will be always glad to hear of my welfare - as I would be to hear of theirs

We had a very long passage on account of which up to our arrival in Pictou Mr Black sent to Janet. We arrived here yesterday (Saturday morning) at 4 o'clock having been exactly nine weeks from Leith, our passage although long has been shorter than any other from Britain to this port this season; for after taking off the time we lay at Bromarty, Pictou and the Quarantine station, we may say that we were only seven weeks - among the numerous ships we passed (for our ship beat every one of them) was the "Intelligence" the ship that Mr Andrew Stewart sailed in, she came in here a little after

4

and in three days we were here, when we arrived here I was in bed and before I got up the custom house officers had been on board, I had therefore nothing to do but dress and go ashore which I did accordingly.

I don't think much of Quebec especially the lower Town, the inhabitants seem to be a mixture of French and Irish and are all low sort of people, in the upper Town the people seem to be of a better sort and a great many of them are English, there are no fine buildings in it and a great number of the houses are made of wood. ~~I went~~ I went to the Scotch Church in the forenoon along with Clark and the Captain in the afternoon we went to the Esplanade to see the parade and hear the music as I had not heard a tune played on an instrument for a long time, I also went into a Catholic Church what like it was and I must say it is the grandest place ever I saw all my life. the inside was all done up with beautiful pictures golden statues, a large triumphal arch all gold below which stood the altar, the organ too was very fine the front of it being all gilt I was sorry that I did not go in during divine service for the music is beautiful.

After walking about all day we felt quite

3

great treat to us as we had not seen anything of the sort for five or six weeks previous to that time. All the houses are made of wood some of them are very neat but I think they have all too many doors and stairs in them, there was one of them I happened to be in seeing Mr. Cummings one of the passengers, which had no less than six stairs from the ground to the principal floor and there were four doors in every room whether it required them or not. We left Quebec on the evening of the 14th and had a pleasant sail up the St. Lawrence we arrived at ^{Grosse} ~~Grosse~~ Island, the Quarantine station in about a week after, all the steerage passengers had to go ashore to show themselves to the Doctor, all got off again but Mrs. Rastal who had gone ashore drunk and turned sick upon it. Jackson, Clark and I were not obliged to go ashore as we were cabin passengers ~~but~~ we however went for pleasure and when we were walking about Jackson met an old acquaintance who was the surgeon, he asked us to his house and there we had as much wine as we could take we remained there till about 10 o'clock when the Captain came off with his boat for us - we weigh anchor that night

5

tired and I was glad to get back to the ship again, the Captain is very kind he told Clark and I that we might live on board as long as we remained in Quebec, however we are not going to remain long ~~here~~ in ~~Quebec~~ here as we intend sailing for Montreal (to-morrow) night and I intend to write you a long letter (before I get settled) with an account of what things you will require when you come here. I'll not say anything about it at present as I am in a hurry to get ashore to get information about the Steamboat & Clark ~~and~~ sends his kindest regards to you all. I hope you have enjoyed better health this summer than formerly and that you have got everything settled as well as you could wish. I also hope my mother and sisters have enjoyed good health this summer. tell them that nothing would give me greater pleasure than to see them on this side the Atlantic. I think that the voyage would do you a great deal of good. tell Janet to remember me to Mary Beaton and family and to all other enquiring friends tell Mary & Christina that I have nothing for them to do for me just now but in my next letter I shall give them a commission also. I remain

My dear father

Your affectionate son

Andrew Black

Alfred Walter Roper

1869-1955

amateur photographer

b. Coburg Ont d. Montreal

m. 1898 Jessie Clark Black from Coburg

family lived in Peterborough

came to Mt., 1895

bank manager in later yrs.

Andrew Black arr. Canada 1833 (see letter) (age 19 yrs)

farmed in Warkworth, 1869 sold farm, moved to Coburg

(see photo of Notice of Sale)

H.V. Roper is son of Andrew Black's daughter (Jessie)

~~John Black, builder (architect) came in 1840 with~~
~~his family (to Coburg?)~~

Andrew Black was the son of John Black
builder (architect) of Edinburgh Scotland

3 exercise books of Andrew Black of year 1829

he would have been 14/15 years old.

Quebec 26th August 1833

My dear Father

When I left Edinburgh it was my intention not to have written you from this place: but an opportunity having presented itself of sending you news of arrival by a friend of the Captain's who has offered to put

a letter free of expence into a Post Office in Britain I readily embrace it as I know my Friends in Edinburgh will be always glad to hear of my welfare as I would be to hear of theirs. — We had a very long passage an account of which up to our arrival in Picton Mr Clark sent to Janet. we arrived here Yesterday (Saturday) morning at 4 O'Clock having been exactly nine weeks from Leith, our passage although long has been shorter than any other from Britain to this Port. — After taking off the time we lay at Promarty, Picton & the Quarentine station, we may say that we were only 7 weeks. — Among the numerous ships we passed (for our ship beat every one of them) was the Diligence the ship that Mr Stewart sailed in, she came in here a little after us after having been out 11 weeks. I heard that they had run short of provisions and also that two of her Stewards passengers had died, and one while cutting Papers on the bowsprit fell over board and was drowned; our vessel was very fortunate there being no Disease on board but Sea sickness.

The time we lay at ^{Picton} ~~Quarentine~~ was spent very pleasant, I went ashore every day but one, on that day I wrote to Edinburgh you know who to and got one of the ships boats and sailed over to the Royal William a Steam vessel which was preparing to sail for London with my Letter, a newspaper for you, and 2 Letters of Mr Clark's one for Janet and the other for his friends in the Isle of Wight all of which I hope have been safely

delivered. next day Jackson, Clark and myself took a walk in
the country it is a very woody place and the land appears to
be very poor, some parts however are well cultivated and the
inhabitants appear to be doing well, we went into one
Farm House and was well entertained by the Farmer and his
wife ^{got} us as much milk as we could drink and as much
Green Peas as made a good dish next day for dinner, both of
which were a great treat to us as we had not seen any thing

of the sort for five or six weeks previous to that time, all the
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go ashore as we were Cabin passengers we however went for
pleasure and when we were waiting about Jackson met
an old acquaintance who was the Surgeon, he asked us to
his house and there we had as much wine as we could take
we remained there till about 10 O'clock when the Captain
of with his boat for us - we weighed anchor that night

three days we were here, when we arrived here I was in bed as
before I got up the Custom house Officers had been on board, I
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I did accordingly - I don't think much of Quebec especially
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Clark & the Captain in the afternoon we went to ^{the} Esplanade
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tune played upon an instrument for a long time
I also went into a Catholic Church to see what like it
was and I must say that it is the grandest place ever I
ever saw all my life. the inside was all done up with

beautiful Pictures, ^{and} statues, a large ^{semicircular} arch
all gold below which stood the altar, the organ to was
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After walking about all day we felt quite tired &
I was glad to get back to ^{the} ship again, the Captain is
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quire when you come here. I'll not say anything about it
at present as I am in a hurry to get ashore to get informa-
tion about the steam boat & Clark sends his kind re-
gards to you all. I hope you have enjoyed better health this
summer than formerly and also that you have got every thing
settled as well as you could wish, I also hope My Mother & P.

enjoyed good health this summer tell them that nothing
would give me greater pleasure than to see them on this side the
Atlantic I think that the Voyage would do you a great deal
of good; tell Janet to remember me to Mary Beaton and Family
and to all the enquiring friends tell Mary & Christina that I have
nothing for them to do for me just now but in my next letter
I shall give them a commission also. I remain

My dear Father
Your affectionate son
And Black

Ms
13 Mr John Black

Builder

15 Clerk St

Edinburgh

A. Black

Quebec 3^d Decr 1844 —

My dear Brother,

In compliance with the Petition of the Committee I have given a regular Licence, authorizing the Parishioners to proceed to the building of a Church. —

But I am extremely sorry to observe that they have introduced into their Petition what it is utterly out of my power to grant: because it is directly contrary to Law.

I allude to the request, that I would "confirm the conditions of the Subscription in such way that the Titles to the several Pews for which the Parishioners have subscribed may be vested in them & their Heirs for ever". —

Now this is what I can not do. The Ecclesiastical Law expressly says, that, "A Seat may not be granted by the Ordinary to a person & his Heirs absolutely". — And this has been repeatedly acted upon, & confirmed, by the

Common Law Courts; as the gentlemen concerned may see,
by reference to 1.st Durnford & East's Reports, p. 428.—
Sticks against Booth.—

I should be truly concerned to place any obstacle in
the way of this very laudable undertaking: but I can not
exceed the powers to which the Constitution in Church &
State has limited me.

There will be plenty of time to make some other
arrangements upon this subject. And any thing practicable
that may meet the wishes of yourself & the Parishioners,
I shall be ready to accede to.

I am, my dear Brother,

yours very affec^t.

J. Quebe

Rev Dr. Mountain

AFFIDAVIT
OF
MARIA MONK'S MOTHER.

" On this day, the twenty-fourth day of October, one thousand eight hundred and thirty-five, before me, William Robertson, one of his Majesty's Justices of the Peace for the district of Montreal, came and appeared Isabella Mills, of the city of Montreal, widow of the late William Monk, who declared, that wishing to guard the public against the deception which has lately been practised in Montreal by designing men, who have taken advantage of the occasional derangement of her daughter, to make scandalous accusations against the Priests and the Nuns in Montreal, and afterward to make her pass herself for a nun, who had left the Convent. And after having made oath on the Holy Evangelists, (to say the truth) the said Isabella Mills declares and says, a man decently dressed (whom afterward I knew to be W. R. Hoyte, stating himself to be a minister of New York,) came to my house on or about the middle of August last, and inquired for one Mr. Mills; that Mr. Esson, a minister here, had told him I could give him some information about that man; I replied that I knew no one of that name in Montreal, but that I had a brother of that name five miles out of town. He then told me that he had lately come to Montreal, with a young woman and child of five weeks old; that the woman had absconded from him at Goodenough's tavern, where they were lodging, and left him with the child; he gave me a description of the woman: I unfortunately discovered that the description answered my daughter, and the reflection that this stranger had called upon Mr. Esson, our pastor, and inquiring for my brother, I suspected that this was planned: I asked for the child, and said that I would place it in a nunnery: to that Mr. Hoyte started every objection, in abusive language against the nuns. At last he consented to give me the child, provided I would give my writing that it should be presented when demanded. We left the house together, Mr. Hoyte requested me to walk at a distance from him, as he was a gentleman. I followed him to Mr. Goodenough's Hotel, and he directed me to room No. 17, and to demand the child; a servant maid gave it to me; Mr. Hoyte came up, and gave me the clothing. I came home with the child, and sent Mrs. Tarbert, an old acquaintance, in search of my daughter; her deposition can be seen. The next day, Mr. Hoyte came in with an elderly man, Dr. Judge Turner, decently dressed, whom he introduced to me as a Mr. Turner, of St. Alban's. They demanded to see the child, which I produced. Mr. Hoyte demanded if I had discovered the mother; I said no, she must be found, said he; she has taken away a shawl and a bonnet belonging to a servant girl at Goode-

nough's ; he would not pay for them ; she had cost him too much already ; that his things were kept at the hotel on that account. Being afraid that this might more deeply involve my daughter, I offered my own shawl to replace the one taken ; Mr. Hoyte first took it but afterward returned it to me on my promise that I would pay for the shawl and bonnet. In the course of the day, Mrs. Tarbert found my daughter, but she would not come to my house ; she sent the bonnet and shawl, which were returned to their owner, who had lent them to my daughter, to assist her in procuring her escape from Mr. Hoyte at the hotel. Early on the afternoon of the same day, Mr. Hoyte came to my house with the same old man, wishing me to make all my efforts to find the girl, in the meantime speaking very bitterly against the Catholics, the Priests, and the Nuns ; mentioning that my daughter had been in the nunnery, where she had been ill treated. I denied that my daughter had ever been in a nunnery ; that when she was about eight years of age, she went to a day-school. At that time came in two other persons, whom Mr. Hoyte introduced ; one was Rev. Mr. Brewster, I do not recollect the other reverence's name. They all requested me, in the most pressing terms, to try to make it out ; my daughter had been in the nunnery ; and that she had some connection with the Priests of the seminary, of which nunneries and Priests she spoke in the most outrageous terms ; said, that should I make that out, myself, my daughter, and child, would be protected for life. I expected to get rid of their importunities, in relating the melancholy circumstances by which my daughter was frequently deranged in her head, and told them, that when at the age of about seven years, she broke a slate pencil in her head ; that since that time her mental faculties were deranged, and by times much more than at other times, but that she was far from being an idiot ; that she could make the most ridiculous, but most plausible stories ; and that as to the history that she had been in a nunnery, it was a fabrication, for she never was in a nunnery ; that at one time I wished to obtain a place in a nunnery for her ; that I had employed the influence of Madame De Montenach, of Dr. Nelson, and of our pastor, the Rev. Mr. Esson, but without success. I told them notwithstanding I was a Protestant and did not like the Catholic religion—like all other respectable Protestants, I held the priests of the seminary and the nuns of Montreal in veneration, as the most pious and charitable persons I ever knew. After many more solicitations to the same effect, three of them retired, but Mr. Hoyte remained, adding to the other solicitations ; he was stopped, a person having rapped at the door ; it was then candlelight. I opened the door, and found Doctor M'Donald, who told me that my daughter Maria was at his house, in the most distressing situation ; that she wished him to come and make her peace with me ; I went with the Doctor to his house in M'Gill street ; she came with me to near my house, but would not come in, notwithstanding I assured her that she would be kindly treated and that I would give her her child ; she crossed the parade ground, and I went into the house, and returned for her —Mr. Hoyte followed me. She was leaning on the west railing of the parade ; we went to her : Mr. Hoyte told her : my dear Mary, I am sorry you have treated yourself and me in this manner ; I hope you have not exposed what has passed between us, nevertheless, I will treat you the same as ever, and spoke to her in the most affectionate terms ; took her in his arms ; she at first spoke to him very cross, and refused to go with him, but at last consented and went with him, absolutely refusing to come to my house. Soon after, Mr. Hoyte came and demanded the child ; I gave it to

him. Next morning Mr. Hoyte returned, and was more pressing than in his former solicitation, and requested me to say that my daughter had been in the nunnery: that should I say so, it would be better than one hundred pounds to me; that I would be protected for life, and that I should leave Montreal, and that I would be better provided for elsewhere. I answered, that thousands of pounds would not induce me to perjure myself; then he got saucy and abusive to the utmost; he said he came to Montreal to detect the infamy of the Priests and the Nuns; that he could not leave my daughter destitute in the wide world as I had done; afterward said, No! she is not your daughter, she is too sensible for that, and went away—He was gone but a few minutes, when Mr. Doucet, an ancient Magistrate in Montreal, entered. That gentleman told me that Mr. Goodenough had just now called upon him, and requested him to let me know that I had a daughter in Montreal; that she had come in with a Mr. Hoyte and a child, and that she had left Mr. Hoyte and the child, but that she was still in Montreal, so as to enable me to look for her, and that I might prevent some mischief that was going on. Then I related to him partly what I have above said. When he was going, two other gentlemen came. I refused to give them any information at first, expecting that they were of the party that had so much agitated me for a few days; but being informed by Mr. Doucet, that he knew one of them, particularly Mr. Perkins, for a respectable citizen for a long time in Montreal, and the other Mr. Curry, two ministers from the United States, that if they came to obtain some information about the distressing events she related to have occurred in her family, he thought it would do no harm, and I related it to them; they appeared to be afflicted with such a circumstance; I have not seen them any more. I asked Mr. Doucet if the man Hoyte could not be put in jail; he replied that he thought not, for what he knew of the business. Then I asked if the Priests were informed of what was going on; he replied, yes, but they never take up these things; they allow their character to defend itself. A few days after, I heard that my daughter was at one Mr. Johnson's, a joiner, at Griffintown, with Mr. Hoyte; that he passed her for a nun that had escaped from the Hotel Dieu Nunnery. I went there two days successively with Mrs. Tarbert; the first day, Mrs. Johnson denied her and said that she was gone to New York with Mr. Hoyte. As I was returning, I met Mr. Hoyte on the wharf and I reproached him for his conduct. I told him that my daughter had been denied me at Johnson's, but that I would have a search-warrant to have her; when I returned, he had really gone with my unfortunate daughter; and I received from Mr. Johnson, his wife and a number of persons in their house the grossest abuse, mixed with texts of the Gospel, Mr. Johnson bringing a Bible for me to swear on. I retired more deeply afflicted than ever, and further sayeth not.

(Signed,)

ISABELLA MILLS,
Widow of the late Wm. Monk.

"Sworn before me, on this 24th of October, 1835."

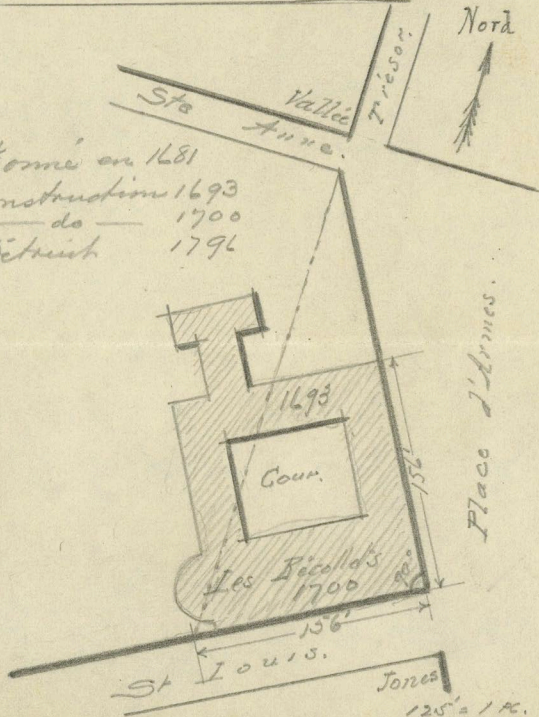
(Signed,)

WILLIAM ROBERTSON, M.D., J.P.

N.B.—Mrs. Monk was house-keeper of the "Government House," the old Château de Ramsay, where the Commander of the Forces, and the Governor General always resided during their stay in Montreal.

Les Récollets à Québec.

Donné en 1681
 Construction 1693
 — do — 1700
 Détruit 1796



M2010.34.1.18