

Guiraca

Guiraca Cinnamomea

Plate CCLXIV



Guiraca Urethra



Published by P. Price Jr.

J

See & Plate



This is &
Samuel Rush's &
Manuscript &
Port Elizabeth. 1827 &
Amen. & & &

Introduction

Arithmetic is the art or science which treats of numbers
It is of two kinds theoretical and practical
The theory of arithmetic explains the nature and quality of
Number and demonstrates the reason of practical operations
Practical arithmetic shows the method of working by numbers
So as to be most useful and expeditious for business

Notation

Notation is the art of expressing numbers by certain characters
Or figures of which there are two methods 1 the roman method
By letter 2 the arabic method by figures the latter is that
of general use

Numeration

Numeration teaches how to read and write any sum or
Number by figures

Simple Addition

Simple addition is the putting together of two or more
Number of the same denomination so as to make them one
Whole or total number called the sum or amount

Rule

Place the numbers to be added one under another th in
units under units tens under tens &c and draw a line under
The lowest number

$$\begin{array}{r}
 16752 \\
 54035 \\
 \hline
 26371 \\
 99161 \\
 \hline
 50409 \\
 99161 \\
 \hline
 99161
 \end{array}$$

$$\begin{array}{r}
 6037 \\
 2430 \\
 \hline
 2651 \\
 11168 \\
 \hline
 5131 \\
 11168 \\
 \hline
 11168
 \end{array}$$

$$\begin{array}{r}
 347126 \\
 570328 \\
 \hline
 421683 \\
 1339137 \\
 \hline
 992011 \\
 1339137 \\
 \hline
 1339137
 \end{array}$$

$$\begin{array}{r}
 1643701 \\
 8354256 \\
 \hline
 2132432 \\
 7526319 \\
 \hline
 17656735 \\
 16013037 \\
 \hline
 17656735
 \end{array}$$

$$\begin{array}{r}
 36215243 \\
 63095175 \\
 \hline
 21431064 \\
 85176450 \\
 \hline
 205920932 \\
 169705659 \\
 \hline
 205920932
 \end{array}$$

$$\begin{array}{r}
 6328751 \\
 4682376 \\
 \hline
 2875410 \\
 6785403 \\
 \hline
 2647910 \\
 13389230 \\
 \hline
 16790499 \\
 23989250 \\
 \hline
 23989250
 \end{array}$$

$$\begin{array}{r}
 34567892 \\
 95653510 \\
 \hline
 13579528 \\
 96749501 \\
 \hline
 316151967 \\
 281554075 \\
 \hline
 316151967
 \end{array}$$

$$\begin{array}{r}
 4261783 \\
 6402531 \\
 \hline
 352643 \\
 96204 \\
 \hline
 12507 \\
 4682 \\
 \hline
 135 \\
 68 \\
 \hline
 11110590 \\
 6848807 \\
 \hline
 11110590
 \end{array}$$

$$\begin{array}{r}
 53865076 \\
 933124 \\
 \hline
 40750208 \\
 1634 \\
 \hline
 8017600 \\
 29201 \\
 \hline
 364833 \\
 73 \\
 \hline
 104048851 \\
 50183778 \\
 \hline
 104048851
 \end{array}$$

Supplement to Addition Exercises

What is the amount of 280 dollars; 765 dollars and of 397 dollars when added together

$$\begin{array}{r}
 2801 \\
 765 \\
 \hline
 3977 \\
 3963
 \end{array}$$

Suppose you lend a neighbor \$210 at one time \$76 at another \$17 at another what is the sum lent Ans, 12

$$\begin{array}{r}
 210 \\
 76 \\
 \hline
 17 \\
 312
 \end{array}$$

A tree was broken off by the wind 27 feet from the ground he was 27 years old when he made the part broken off was 15 feet long what was the height of that tree before it was broken

$$\begin{array}{r}
 27 \\
 15 \\
 \hline
 42
 \end{array}$$

$$\begin{array}{r}
 27 \\
 15 \\
 \hline
 42
 \end{array}$$

Washington was born in the year of our lord 1732 he was 67 years old when he died in what year of our lord did he die

$$\begin{array}{r}
 1732 \\
 67 \\
 \hline
 1799 \\
 1792
 \end{array}$$

$$\begin{array}{r}
 8761 \\
 597 \\
 \hline
 9358 \\
 9358
 \end{array}$$

Continued

From the creation to the defeat of the israelites from egypt D 1810 the number of inhabitants was 2513 years to the siege of troy 307 years more to the building of solomons temple 190 years to the building of some 2513 years 585 massachusetts 47 2040 the death of julius caesar 102 years to the christain era 44 years required the time from the creation to the christain era

$$\begin{array}{r} 2513 \\ 307 \\ 190 \\ 251 \\ 244 \\ 363 \\ 112 \\ 44 \\ \hline 4004 \\ 1471 \\ \hline 4004 \end{array}$$

There are five numbers the first is 2617 the second 595 the third 1702 the fourth as much less whose fortune was 25 than as the three first and the fifth sand 25 hundred and 25 dollars twice as much as the third and fourth what is the whole sum and what was the amount of the whole estate

$$\begin{array}{r} 2617 \\ 595 \\ 1702 \\ 5212 \\ 13722 \\ \hline 24252 \\ 21655 \\ \hline 24252 \end{array}$$

$$\begin{array}{r} 225705 \\ 214460 \\ 217895 \\ 472040 \\ 76931 \\ \hline 361912 \\ 1471975 \\ \hline 1243265 \\ 1471975 \\ \hline \end{array}$$

$$\begin{array}{r} 30000 \\ 25000 \\ 2500 \\ 25 \\ \hline 57525 \end{array}$$

Simple Subtraction

Simple Subtraction is taking a less number from a greater of the same denomination so as to shew the difference or remainder as taken from & there remains 3

$$\begin{array}{r} 327865321465 \\ 106773612342 \\ \hline 221091707123 \\ 327865321465 \\ \hline 10236742317981062 \\ 3711254516703281 \\ \hline 144545781277787 \\ 10236742317981062 \\ \hline \end{array}$$

Supplement to Subtraction

Exercises

What is the difference between a piece of cloth that measured 691 yards there were sold 273 yards how many yards should there remain

$$\begin{array}{r} 78360 \\ 5421 \\ \hline 72939 \end{array}$$

$$\begin{array}{r} 691 \\ 273 \\ \hline 418 \end{array}$$

There are two numbers whose difference is 378 the greater taken from 195 leaves 96 what number is that which demand the less

$$\begin{array}{r} 862 \\ 378 \\ \hline 484 \end{array}$$

$$\begin{array}{r} 175 \\ 96 \\ \hline 79 \end{array}$$

Suppose a man to have been born in the year 1745 how old was he in 1799

$$\begin{array}{r} 1799 \\ 1745 \\ \hline 54 \end{array}$$

What number is that to which if you add 489 it will be 6350

$$\begin{array}{r} 6350 \\ 489 \\ \hline 5861 \end{array}$$

Simple Multiplication

Simple multiplication teaches having to numbers given of the same denomination to find a third which shall contain either of the two given numbers as many times as the other contains a unit

Rule

Place the numbers as in subtraction the larger number uppermost which units under & and then draw a line below

$$\begin{array}{r} 737846 \\ 235 \\ \hline 189250 \\ 113538 \\ \hline 18682 \\ 4895810 \end{array}$$

$$\begin{array}{r} 14356 \\ 648 \\ \hline 114448 \\ 57424 \\ \hline 46136 \\ 9502688 \end{array}$$

$$\begin{array}{r} 29831 \\ 152 \\ \hline 59662 \\ 149155 \\ \hline 268477 \\ 28999112 \\ 817793024 \end{array}$$

$$\begin{array}{r} 583 \\ 56 \\ \hline 3478 \\ 2915 \\ \hline 32648 \end{array}$$

$$\begin{array}{r} 1086 \\ 72 \\ \hline 2172 \\ 7602 \\ \hline 78192 \end{array}$$

$$\begin{array}{r} 36500 \\ 730 \\ \hline 1095000 \\ 2555 \\ \hline 26645000 \end{array}$$

$$\begin{array}{r} 6473 \\ 99 \\ \hline 38257 \\ 98257 \\ \hline 640427 \end{array}$$

$$\begin{array}{r} 154326 \\ 3007 \\ \hline 1080284 \\ 462978 \\ \hline 484058284 \end{array}$$

$$\begin{array}{r} 78000 \\ 600 \\ \hline 46800000 \end{array}$$

$$\begin{array}{r} 7021 \\ 12 \\ \hline 63189 \\ 63189 \\ \hline 695079 \end{array}$$

$$\begin{array}{r} 3457 \\ 302 \\ \hline 6914 \\ 10371 \\ \hline 1044014 \end{array}$$

$$\begin{array}{r} 5384976 \\ 9999 \\ \hline 48464784 \\ 48464784 \\ \hline 48464784 \\ 48464784 \\ \hline 53844375027 \end{array}$$

What sum of money must be divided between 27 men so that each man receive 115 dollars

$$\begin{array}{r} 115 \\ 27 \\ \hline 805 \\ 2305 \\ \hline 3105 \end{array}$$

Supplement to Multiplication

Exercises

An army of 10700 men having plundered a city took so much money that when it was shared for which each man received among them each man received 13 dollars what did they all receive money taken

$$\begin{array}{r} 10700 \\ 46 \\ \hline 64200 \\ 42900 \\ \hline 492200 \end{array}$$

Suppose a certain town contains 145 houses each house two families and each family 6 inhabitants in 5 years there being 52 weeks in a year inhabitants of that town

$$\begin{array}{r} 145 \\ 6 \\ \hline 870 \\ 1740 \end{array}$$

How much wheat will some in the bush in 37 days at 5 bushels per bushel and 4 bushels per day each man

$$\begin{array}{r} 37 \\ 36 \\ \hline 222 \\ 111 \\ \hline 1332 \\ 5 \\ \hline 6660 \end{array}$$

There were 175 men engaged to finish a piece of masonry for which each man received 13 dollars what did they all receive

$$\begin{array}{r} 175 \\ 13 \\ \hline 2275 \end{array}$$

If a man earn 2 dollars per week how much will he earn in 5 years there being 52 weeks in a year

$$\begin{array}{r} 52 \\ 2 \\ \hline 104 \end{array}$$

If the price of wheat be 175 cents per bushel and 4 bushels of wheat make 1 barrel of flour what will be the price of 175 barrels of flour

$$\begin{array}{r} 175 \\ 4 \\ \hline 700 \end{array}$$

Simple Division

Simple division teaches having two numbers given of the same denomination to find how many times one of the given numbers contains the other

Rule

1 Assume as many figures on the left hand of the dividend as contain the divisor once or often find how many times they contain it and place the answer as the highest figures of the quotient

Examples

$$\begin{array}{r} 52 \overline{) 7012} \quad (134 \\ \underline{52} \\ 181 \\ \underline{156} \\ 252 \\ \underline{208} \\ 44 \end{array}$$

$$\begin{array}{r} 86 \overline{) 17354} \quad (201 \\ \underline{172} \\ 154 \\ \underline{86} \\ 68 \end{array}$$

$$\begin{array}{r} 235 \overline{) 8823810} \quad (37846 \\ \underline{1705} \\ 1645 \\ \underline{1988} \\ 1580 \\ \underline{081} \\ 140 \\ \underline{1410} \\ 1410 \end{array}$$

$$\begin{array}{r} 29 \overline{) 153598} \quad (5296 \\ \underline{145} \\ 85 \\ \underline{58} \\ 279 \\ \underline{261} \\ 188 \\ \underline{172} \\ 16 \end{array}$$

$$\begin{array}{r} 63 \overline{) 30114} (478 \\ \underline{252} \\ 491 \\ \underline{441} \\ 504 \\ \underline{504} \end{array}$$

$$\begin{array}{r} 64 \overline{) 93026} (14358 \\ \underline{648} \\ 2822 \\ \underline{2592} \\ 2306 \\ \underline{1944} \\ 3628 \\ \underline{3240} \\ 3888 \\ \underline{3888} \end{array}$$

$$\begin{array}{r} 565 \overline{) 974932} (2671 \\ \underline{1130} \\ 2449 \\ \underline{2190} \\ 2593 \\ \underline{2595} \\ 382 \\ \underline{365} \\ 17 \end{array}$$

$$\begin{array}{r} 65705 \overline{) 5221580} (76 \\ \underline{450935} \\ 712230 \\ \underline{412230} \end{array}$$

$$\begin{array}{r} 563 \overline{) 3228242} (5734 \\ \underline{2815} \\ 4132 \\ \underline{3941} \\ 1914 \\ \underline{1689} \\ 2252 \\ \underline{2252} \end{array}$$

$$\begin{array}{r} 3215 \overline{) 1030603618} (320561 \\ \underline{2635} \\ 6620 \\ \underline{6430} \\ 19036 \\ \underline{16015} \\ 19611 \\ \underline{19290} \\ 3215 \\ \underline{3215} \end{array}$$

$$\begin{array}{r} 6510 \overline{) 979432} (15 \\ \underline{325} \\ 544 \\ \underline{521} \\ 232 \end{array}$$

$$\begin{array}{r} 83600 \overline{) 2764503721} (3307 \\ \underline{249} \\ 274 \\ \underline{249} \\ 255 \\ \underline{249} \\ 603 \\ \underline{581} \\ 2221 \end{array}$$

Supplement to Division Exercises

Suppose an estate of 36502 dol. An army of 15000 men having
 has to be divided among 13 sons plundered a city and took 26250
 how much would each one receive in dollars what was each man's
 share

$$\begin{array}{r} 13 \overline{) 36502} (2814 \\ \underline{26} \\ 105 \\ \underline{104} \\ 13 \\ \underline{13} \\ 52 \\ \underline{52} \end{array}$$

$$\begin{array}{r} 15 \overline{) 2625000} (175 \\ \underline{15} \\ 112 \\ \underline{105} \\ 75 \\ \underline{75} \end{array}$$

No. cartons number of men who If 7412 eggs be packed in
 a concerned in the payment of 34 cashes how many in a cash
 \$19250 and each man paid 35 dollars what was the number
 of men

$$\begin{array}{r} 25 \overline{) 18950} (758 \\ \underline{175} \\ 145 \\ \underline{125} \\ 200 \\ \underline{200} \end{array}$$

$$\begin{array}{r} 34 \overline{) 7412} (218 \\ \underline{68} \\ 61 \\ \underline{34} \\ 272 \\ \underline{272} \end{array}$$

A farm of 375 acres is let for A field of 27 acres produces
 1125 dollars how much does it 675 bushels of wheat how much
 pay per acre is that per acre

$$\begin{array}{r} 375 \overline{) 1125} (3 \\ \underline{1125} \end{array}$$

$$\begin{array}{r} 27 \overline{) 675} (25 \\ \underline{54} \\ 135 \\ \underline{135} \end{array}$$

Compound Addition

Compound Addition is the adding of number which consist of notes of difference value as pound shillings pence and farthings called difference denomination

Rule For Compound Addition

Place the numbers so that those of the same denomination may stand directly under each other

1 of Money Table

4 Farthings		Penny marked d
12 Pence	make one	Shilling s
20 Shillings		Pound £

Examples

$$\begin{array}{r}
 \text{£} \quad \text{s} \quad \text{d} \quad \text{qrs} \\
 18 = 4 = 11 = 1 \\
 26 = 15 = 11 = 0 \\
 8 = 1 = 7 = 3 \\
 \hline
 53 = 1 = 10 = 0 \\
 34 = 16 = 10 = 3 \\
 53 = 1 = 10 = 0
 \end{array}$$

$$\begin{array}{r}
 \text{£} \quad \text{s} \quad \text{d} \quad \text{qrs} \\
 37 = 15 = 6 = 2 \\
 5 = 7 = 4 = 0 \\
 68 = 3 = 2 = 1 \\
 7 = 0 = 5 = 3 \\
 \hline
 452 = 6 = 6 = 2 \\
 80 = 11 = 0 = 0 \\
 452 = 6 = 6 = 2
 \end{array}$$

2 of Troy Weight

By troy weight are weighed gold silver jewels electuaries and liquors

Table

24 grains
20 pennyweight
12 Ounces

Pennyweight	marked	pwt
Ounce		oz
Pound		lb

Examples

$$\begin{array}{r}
 \text{lb} \quad \text{oz} \quad \text{pwt} \quad \text{grs} \\
 70 = 10 = 13 = 4 \\
 3 = 9 = 7 = 16 \\
 28 = 0 = 11 = 5 \\
 7 = 3 = 6 = 2 \\
 \hline
 109 = 11 = 7 = 3 \\
 37 = 0 = 13 = 23 \\
 109 = 11 = 7 = 3
 \end{array}$$

$$\begin{array}{r}
 \text{lb} \quad \text{oz} \quad \text{pwt} \quad \text{grs} \\
 7 = 14 = 23 \\
 2 = 0 = 6 \\
 11 = 13 = 5 \\
 10 = 12 = 7 \\
 \hline
 32 = 0 = 17 \\
 24 = 5 = 17 \\
 32 = 0 = 17
 \end{array}$$

3 of Avoirdupois Weight

By avoirdupois weight are weighted all things of a coarse and doossey nature as sugar bread flower tallow hay leather and all kinds of metals except gold and silver

Rule

16 Drains dr	Cunce marked oz
16 Cunces	Pound lb
28 Pounds	Mohammed quarter of a hundred weight
4 quarters	100 weight or 112 pounds cwt
20 Hundred weight	5 Ton

Examples

lb	oz	dr
1	6	3
2	5	11
3	2	25
4	17	0
5	2	3
6	1	16
7	10	14
8	13	0
9	1	15
10	16	10
11	10	14
12	13	0
13	1	15
14	16	10
15	10	14

lb	oz	dr
1	6	3
2	5	11
3	2	25
4	17	0
5	2	3
6	1	16
7	10	14
8	13	0
9	1	15
10	16	10
11	10	14
12	13	0
13	1	15
14	16	10
15	10	14

4 of Time Table

60 Seconds s	Minute marked m
60 Minutes	Hour h
24 Hours	Day d
7 Days	Week w
4 Weeks	Month mo
13 Months 1d 21h	Junilian year y

Examples

y	mo	w	d	h	m	s
16	10	3	6	23	57	43
2	7	2	5	16	2	32
3	7	6	1	3	1	1
4	7	4	0	1	1	4
5	3	0	4	0	1	9
6	5	0	4	0	2	2
7	3	0	4	0	1	9

y	mo	w	d	h	m	s
9	11	3	6	22	15	36
3	10	2	5	6	55	44
8	2	1	0	1	22	33
3	4	3	3	5	8	7
25	3	3	2	8	12	0
16	4	3	2	3	26	24
23	3	3	2	6	12	0

5. of Motion Table

60 Seconds	Prime minute marked	11
60 Minutes	Degree	0
90 Degrees	make one Sign	3
12 Signs or 360	The whole great circle	
Degree	of the Zodiac	

Example.

25° 17' 14"	0° 5' 44"
17° 14' 56"	9° 8' 55"
6° 35' 25"	1° 26' 44"
10° 17' 18"	1° 26' 44"
59° 59' 54"	8° 10' 33"
54° 42' 36"	1° 9' 33"
59° 59' 54"	21° 39' 50"
	1° 12' 33"
	21° 39' 50"

6 of Cloth Measure Table

2 Inches one fifth in	Nail marked	now
4 Nails or 1 inches	quarter of a yard	qr
4 quarters of a yard or 16 inches	one yard	yd
3 quarters of a yard or 17 inches makes	ell flamish	8 fl
5 quarters of a yard or 17 inches	ell English	8 fl
6 quarters of a yard or 18 inches	ell French	8 fl
7 quarters of a yard or 19 inches	ell Scotch	8 fr
or 37 inches and one fifth	Spanish yard	8 sc
3 quarters and two third		

Examples

614° 3' 2"	9° 3' 2"
56° 1' 2"	19° 3' 2"
41° 0' 1"	56° 1' 2"
15° 8' 2"	74° 2' 2"
174° 3' 0"	19° 2' 2"
59° 2' 1"	102° 3' 1"
674° 3' 0"	82° 3' 1"
	102° 3' 1"

1 of Long Measure

by long measure are measured distance or any thing where length is considered without regard to breadth

Table

3 Barley corns	Inch marked	in
12 Inches	foot	ft
3 Feet	yard	yd
5 1/2 Yards or 16 1/2 feet	Red perch or pole	pol
40 Poles	make one furlong	fur
9 furlons	mile	mile
69 1/2 Statutes miles mea	Degree of a great circle	
360 Degree	A great circle of the earth	

Examples

Deg	mi	fur	pol	ft	in	bar
168° 57' 7"	57° 7' 7"	26° 15' 11"	11° 2'			
124° 53' 6"	53° 6' 15"	7° 6' 11"	1° 0'			
79° 36' 1"	36° 1' 7"	3° 2' 11"	1° 1'			
4° 7' 3"	7° 3' 0"	3° 6' 11"	1° 1'			
377° 17' 2"	17° 2' 13"	4° 0' 6"	1° 1'			
203° 28' 2"	28° 2' 26"	4° 6' 11"	1° 1'			
377° 17' 2"	17° 2' 13"	4° 0' 6"	1° 1'			

8. of Land or Square Measure

By square measure are measured all things that have length and breadth

Table

144 Inches	Square foot
9 Feet	yard
30 1/2 yards or	Pole
272 1/2 feet	Rood
30 Poles	Acre
4 Roods 160 rods	
or 4840 yards	
640 Acres	Mile

Examples

Acres	rood	pol	ft	in
3	76	3	36	73
5	68	1	27	58
2	47	2	35	61
1	13	0	17	41
8	16	0	22	19
1	13	0	19	41

9 of Solid Measure

By solid measure are measured all things that have length breadth and thickness

Table

1728 Inches	foot
27 feet	yard
40 feet of round timber	Ton or load
or 50 feet of hewn timber make one	
128 Solid feet is in	cord of wood
length 4 in breadth and	
4 in height	

Examples

ft	in
65	37
19	26
36	17
57	33
177	113
112	76
177	113

ft	in
39	118
4	56
18	72
29	86
92	77
52	86
92	77

10 of wine Measure.

by wine measure are measured rum brandy perrey-
cider mead vinegar and oil.

Table

2 Pints pts	quart	measures	qt
4 quarts	gallon		gal
10 Gallons	Anchor of Brandy	one	
1 1/2 Gallons	Brunlet	run	
3 1/2 Gallons	make one Half hoghead	1/2 hhd	
4 1/2 Gallons	Piece	tier	
6 1/2 Gallons	Hoghead	hhd	
2 Hogheads	pipe or Butt	P. or B.	
2 pipes	Tun.	T	

Examples

Wheal	gal	pts	Wheal	gal	pts	pts
39	5	243	5	2	53	3
15	2	71	3	5	11	3
35	1	240	1	2	04	2
29	3	842	17	0	05	8
121	1	443	53	0	2	3
81	1	143	14	0	0	5
121	1	443				

11 of Ale or Beer Measure Table

2 Pints	quart	quarts
4 quarts	Gallons	gal
8 Gallons	Firkin of ale in London	gal
16 Gallons	firkin of ale or Beer	fi
1 Gallons	firkin of ale beaver London	fi
2 Firkins	make one kilderkin	Barrel
2 Kilderkins	Barrel	hhd
18 Barrels or 45 gallons	hoghead of beer	hhd
2 Barrels	Punchoon	pu
3 Barrels or 15 hogheads	Butt	butt

Examples

Wheal	gal	pts	Wheal	gal	pts
327	48	2	23	6	2
28	51	3	45	2	3
173	24	1	98	7	1
27	16	0	36	8	0
557	31	6	20	5	0
227	37	4	18	1	2
557	31	6	20	5	0

6 Compound Subtraction

Compound Subtraction teaches to find the difference between any two sums of diverse denominations.

1 of Money

Supposing a man to have lent £155 10s 1d and to have received again of his money £23 15s how much remains due

$$\begin{array}{r} 155^{\circ} 10' 1'' \\ 23^{\circ} 15' 0'' \\ \hline 131^{\circ} 55' 1'' \end{array}$$

A certain man sold a lot of land for £755 11s 6d he received at one time £61 ~~10s~~ at another time £125 13s 10d how much is there yet due

$$\begin{array}{r} 755^{\circ} 11' 6'' \\ 125^{\circ} 13' 10'' \\ 61^{\circ} 10' 0'' \\ \hline 568^{\circ} 58' 16'' \end{array}$$

2 of Troy Weight

$$\begin{array}{r} 76^{\circ} 8' 16'' 13 \\ 3^{\circ} 2' 17'' 6 \\ \hline 72^{\circ} 10' 11'' 7 \\ 12^{\circ} 8' 16'' 13 \\ \hline 60^{\circ} 2' 27'' 20 \end{array}$$

$$\begin{array}{r} 7^{\circ} 3' 5'' \\ 2^{\circ} 4' 8'' 7 \\ 5^{\circ} 4' 5'' 6 \\ \hline 14^{\circ} 11' 18'' \end{array}$$

3. of Avoirdupois Weight

$$\begin{array}{r} 11^{\circ} 15' 5'' \\ 5^{\circ} 6' 7'' \\ 4^{\circ} 9' 8'' \\ 3^{\circ} 15' 5'' \\ \hline 23^{\circ} 43' 25'' \end{array}$$

$$\begin{array}{r} 3^{\circ} 11' 11'' 14'' 7'' 3'' \\ 5^{\circ} 5' 11'' 18'' 9'' 2'' \\ \hline 8^{\circ} 16' 22'' 32'' 13'' 11'' \\ 6^{\circ} 11' 11'' 14'' 7'' 3'' \end{array}$$

4. of Time

$$\begin{array}{r} 39^{\circ} 6' 3'' 6'' 20'' 44'' 55'' \\ 16^{\circ} 9' 4'' 1'' 2'' 18'' 59'' 52'' \\ \hline 23^{\circ} 10' 3'' 4'' 1'' 44'' 55'' \\ 39^{\circ} 6' 3'' 6'' 20'' 44'' 55'' \end{array}$$

5 of Motion

$$\begin{array}{r} 16^{\circ} 27' 33'' \\ 2^{\circ} 34' 23'' \\ \hline 18^{\circ} 53' 10'' \\ 16^{\circ} 27' 33'' \end{array}$$

$$\begin{array}{r} 30^{\circ} 51'' \\ 6^{\circ} 51'' \\ 349^{\circ} 57'' \\ \hline 386^{\circ} 54'' \\ 6^{\circ} 51'' \end{array}$$

6. of Cloth Measure

$$\begin{array}{r} 27^{\circ} 1'' 2'' \\ 16^{\circ} 1'' 3'' \\ 11^{\circ} 7'' 9'' \\ \hline 54^{\circ} 1'' 2'' \end{array}$$

$$\begin{array}{r} 28^{\circ} 2'' 1'' \\ 17^{\circ} 3'' 2'' \\ 8^{\circ} 5'' 9'' \\ \hline 53^{\circ} 2'' 1'' \end{array}$$

In 29 guineas at 28 each
how many farthings

$$\begin{array}{r} 29 \\ \times 28 \\ \hline 232 \\ 580 \\ \hline 812 \\ \times 28 \\ \hline 1624 \\ 512 \\ \hline 812 \\ \times 28 \\ \hline 3896 \end{array}$$

In 12 crowns at 68d how
many pence and farthings

$$\begin{array}{r} 68 \\ \times 12 \\ \hline 136 \\ 1360 \\ \hline 816 \end{array}$$

In £175 15s how many
pence

$$\begin{array}{r} 175 \times 15 \\ \hline 2250 \\ 3500 \\ \hline 6750 \end{array}$$

In 671 egles at 10d each
how many shillings
three pence pence and far

things Ans 40 2 6 0 5 16 10 40
three pence 4 2 3 120 pence
and 19 3 2 4 80 yrs

$$\begin{array}{r} 671 \\ \times 10 \\ \hline 6710 \\ \times 20 \\ \hline 13420 \\ \times 3 \\ \hline 40260 \\ \times 1 \\ \hline 161040 \\ \times 3 \\ \hline 483120 \\ \times 4 \\ \hline 1932480 \end{array}$$

Reduction Ascending

Rule

Divide the lowest denomination given by that
number which it takes of the same to make one of
the next higher and so continue to do till you have
brought it into the denomination which your question
requires

Examples

In 1765 pence how many
pounds

$$\begin{array}{r} 12 \overline{) 1765} \\ 201 \overline{) 1765} \\ 474 \overline{) 1765} \\ 140 \overline{) 1765} \\ \hline 71 \end{array}$$

In 6950 sixpences how many
pounds

$$\begin{array}{r} 2 \overline{) 6950} \\ 20 \overline{) 6950} \\ 17375 \end{array}$$

In 38976 farthings how many
guineas

$$\begin{array}{r} 4 \overline{) 38976} \\ 12 \overline{) 38976} \\ 28122 \overline{) 38976} \\ 56 \overline{) 38976} \\ 252 \overline{) 38976} \\ 252 \overline{) 38976} \end{array}$$

In 3792 farthings how many
crowns

$$\begin{array}{r} 4 \overline{) 3792} \\ 19 \overline{) 3792} \\ 19 \overline{) 3792} \\ 1584 \overline{) 3792} \\ 1584 \overline{) 3792} \end{array}$$

In 48900 farthing how many pence three pence six pence and dollars

$$\begin{array}{r} 4 \overline{) 18260} \\ 9 \overline{) 12240} \\ 3 \overline{) 4080} \\ 12 \overline{) 2040} \\ \underline{170} \end{array}$$

Reduction Ascending & Descending
Money

In 57 mardores at 96s each
how many dollars

$$\begin{array}{r} 57 \\ 36 \\ \hline 542 \\ \hline 171 \\ 61052342 \\ \hline 12 \\ \hline 23 \\ \hline 242 \\ \hline 12 \\ \hline 12 \end{array}$$

In £75 how many guineas

$$\begin{array}{r} 13 \\ 20 \\ 2 \overline{) 146052} \\ \underline{140} \\ 60 \\ \underline{56} \\ 4 \end{array}$$

In 6952 three pence how
many pistoles at 22.

$$\begin{array}{r} \overline{4) 6952} \\ 22) 1758 \quad (79 \\ \underline{154} \\ \underline{198} \\ 198 \end{array}$$

ascending &
descending
money
in 10 pistoles how many
Pounds

$$\begin{array}{r} 75 \\ 22 \\ \hline 150 \\ 150 \\ \hline 210) 1650 \\ \underline{820} \\ 830 \\ \underline{820} \\ 10 \end{array}$$

In £ 63 and 5 guineas how many dollars

$$\begin{array}{r} 13 \\ 12 \overline{) 1560} \\ \underline{120} \\ 360 \\ \underline{360} \\ 000 \\ \underline{000} \\ 000 \\ \underline{000} \\ 000 \\ \underline{000} \\ 000 \\ \underline{000} \\ 000 \end{array}$$

Continued
Troy Weight

In 10th of silver how many
spoon each weight 5 oz

$$\begin{array}{r} 10/10000 \\ 24 \overline{) 15681} \\ \underline{2019} \\ 1295 \\ \underline{3119} \\ 3119 \end{array}$$

In 1404 or how many hundred weight

$$\begin{array}{r} 16 \overline{) 14048} \\ \underline{28} 878 \\ \underline{4151} \\ 7310 \end{array}$$

1 lb 4500 grains of silver horn
many teaspoon each one
ounce

$$\begin{array}{r} 24 \overline{) 4560} \\ \underline{24} \\ 216 \\ \underline{168} \\ 480 \\ \underline{480} \\ 0 \end{array} \quad \left(\begin{array}{l} 9 \\ 9 \\ 9 \end{array} \right)$$

In 470 boxes of sugar each
20 lb from Murray Co. Nt

$$\begin{array}{r} 470 \\ 26 \\ \hline 2820 \\ 940 \\ \hline 28 \overline{) 12220} \\ \underline{4} 436 \\ \hline 109912 \end{array}$$

In 17 cart 1 gr 6 lb of sugar how many parcels each 17 lb

$$\begin{array}{r}
 \text{Cwt} \\
 17 \\
 \underline{4} \\
 89 \\
 28 \\
 \underline{59} \\
 135
 \end{array}$$

Time

Supposing a man to be 31 years old how many seconds has he lived allowing 365 days 6 hours to a year

$$\begin{array}{r}
 36526 \\
 24 \\
 \hline
 1466 \\
 130 \\
 \hline
 8766 \\
 21 \\
 \hline
 8766 \\
 17532 \\
 \hline
 184056 \\
 60 \\
 \hline
 11045160 \\
 60 \\
 \hline
 662709600
 \end{array}$$

How many minutes from the commencement of the war between America and England April 11 1775 to the settlement of general peace which took place January 20 1783

$$\begin{array}{r}
 368 \\
 7 \\
 \hline
 2888 \\
 276 \\
 \hline
 2851 \\
 24 \\
 \hline
 17324 \\
 8662 \\
 \hline
 32 \\
 67986 \\
 60 \\
 \hline
 4079160 \\
 276
 \end{array}$$

Long Measure

How many times does the wheel which is 18 feet 6 inches in circumference turn round in the distance of 150 miles

$$\begin{array}{r}
 150 \\
 8 \\
 \hline
 1200 \\
 40 \\
 \hline
 48000 \\
 1640 \\
 \hline
 585000 \\
 48000 \\
 \hline
 140000 \\
 172000 \\
 \hline
 12 \\
 1584000 \\
 152000 \\
 \hline
 222 \overline{) 1584000} \quad 428100 \\
 888 \\
 \hline
 624 \\
 444 \\
 \hline
 1800 \\
 1776 \\
 \hline
 240 \\
 228 \\
 \hline
 12
 \end{array}$$

How many barley corns will reach round the globe it being 360 degrees first of

$$\begin{array}{r}
 360 \\
 694 \\
 \hline
 5240 \\
 2160 \\
 \hline
 1800 \\
 25020 \\
 5 \\
 \hline
 500100 \\
 40 \\
 \hline
 5006400 \\
 164 \\
 \hline
 48052400 \\
 80013600 \\
 \hline
 4003200 \\
 132145000 \\
 \hline
 12 \\
 364211200 \\
 136105600 \\
 \hline
 1585267200 \\
 3 \\
 \hline
 3755201600
 \end{array}$$

Land or Square Measure

In 2852 rods how many acres Answer 11 a 3 r 12 p

$$\begin{array}{r} 4 \overline{) 11312} \\ 44 \\ 1712 \end{array}$$

Solid Measure.

In 552900 solid inches how many cords of wood

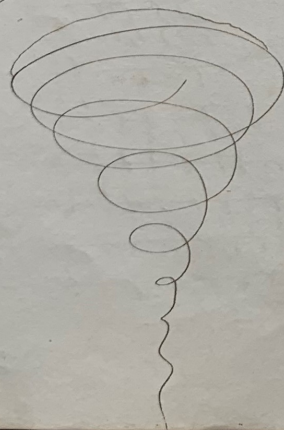
$$\begin{array}{r} 12 \overline{) 552900} \\ 24000 \\ 31290 \\ 25600 \\ 5690 \end{array}$$

Dry Measure.

How many solid inches in a cord

$$\begin{array}{r} 128 \\ 128 \\ 1728 \\ 1024 \\ 256 \\ 256 \\ 1184 \end{array}$$

Dry Measure



Supplement to Reduction Exercises.

In 16 guineas how many crowns

$$\begin{array}{r} 36 \\ 28 \\ 588 \\ 72 \\ 1008 \\ 12 \\ 2016 \\ 1008 \\ 12096 \\ 79 \\ 79 \\ 319 \\ 395 \\ 246 \\ 237 \\ 9 \end{array}$$

How many rings each weighing 5 pwt 1 gr may be made of 5th size 16 pwt 2 grs of gold

wt	oz	pwt	grs
5	16	2	
12			
41			
20			
836			5117
24			24
5346			10
1672			127
127	200	66	158
127			
736			
635			
1016			
1016			

How many Sept 2 feet 5 inches each will it require a man to take travelling from Westminster to Boston it being 43 miles

$$\begin{array}{r} 13 \\ 344 \\ 40 \\ 13760 \\ 52 \\ 68800 \\ 6880 \\ 75680 \\ 3 \\ 227040 \\ 2724440 \\ 261 \\ 114 \\ 87 \\ 274 \\ 261 \\ 138 \\ 116 \\ 220 \\ 203 \end{array}$$

Continued

How many square feet in a
Square mile

$$\begin{array}{r} 640 \\ 4840 \\ \hline 3600 \\ 5120 \\ 2560 \\ \hline 9097600 \\ 9 \\ \hline 27875400 \end{array}$$

Let 30 dollars be distributed
among three men in such manner
that as often as the first has
5, the second shall have 3 and
the third 2 what will each man
receive

$$\begin{array}{r} 10 \\ 21 \overline{) 210} \\ \underline{42} \\ 100 \\ \underline{161} \\ 4 \end{array}$$

$$\begin{array}{r} 29 \\ 130 \\ 2312 \\ \hline 29 \\ 130 \end{array}$$

If a vintner be desirous to draw off a pipe of wine into bottles
containing pints quarts and 2 quarts of each an equal number how
many must he have

$$\begin{array}{r} 2 \\ 13 \\ \hline 5 \\ 11008444 \\ 7 \\ \hline 30 \\ 180 \\ 28 \\ 280 \\ \hline 3 \end{array}$$

There are three fields, one contains 37 acres, another 10 acres, and the
other 12 acres and 1 rood: how many shares of 20 perches each, are
contained in the whole?

$$\begin{array}{r} 7 \\ 10 \\ 1201 \\ \hline 21 \\ 4 \\ \hline 117 \\ 40 \\ \hline 16 \overline{) 4680} \\ \underline{456} \\ 120 \\ 26 \\ \hline 44 \end{array}$$

Continued

There are 100th of silver the property of 3 men of which A
receives 17lb 10g 17p 17gr of what remains B shares 10g 1gr
so often as C share 13p 17gr what are the shares of B and C

$$\begin{array}{r} 170 \text{ pmt grs} \\ 106'' 00'' 00'' 100 \\ 17'' 10017'' 17 \\ \hline 88'' 100'' 5 \end{array}$$

$$\begin{array}{r} 177 \\ 1097 \\ \hline 21140 \\ 24 \\ \hline 84565 \\ 42250 \\ \hline 111507565 \\ 4794 \\ \hline 2796 \\ 2397 \\ \hline 3995 \\ 3995 \end{array}$$

$$\begin{array}{r} 13 \\ 24 \\ \hline 52 \\ 96 \\ \hline 31.2 \end{array}$$

$$\begin{array}{r} 88'' 100'' 5 \\ 34'' 4'' 15 \\ \hline 538'' 55 \end{array}$$

$$\begin{array}{r} 635 \\ 212 \\ \hline 1770 \\ 635 \\ \hline 1905 \\ 24 \overline{) 198120} \\ \underline{192} \\ 61 \\ 48 \\ \hline 132 \\ 120 \\ \hline 12 \\ 11 \end{array}$$

[Decorative flourish]

Fractions.

When thing or things signified by figures are whole ones then the figures which signify them are called integers or whole numbers but when only some parts of a thing are signified by figures as two thirds of any thing five eighths or tenths then the figures which signify these parts of a thing being the expressions of some quantity less than one are called fractions

Decimal Fractions

Decimal Fractions are also expression of parts of an integer; or are in value something less than one of any thing where over it may be which is signified by them

Addition of Decimals

Rule

Place the numbers either mixed or pure decimals under each other according to the value of their places find their sum as in whole numbers and point off so many places for decimals as are equal to the greatest number decimal places in any of the given numbers

Examples

$$\begin{array}{r} 045,601 \\ 13724 \\ 621 \\ 812,513 \\ 1,5462 \\ \hline 1,82,9326 \end{array}$$

Required the sum of 37,021 + 546,35 + 8,4 + 37,325 +

$$\begin{array}{r} 37,021 \\ 546,35 \\ 8,4 \\ 37,325 \\ \hline 629,896 \end{array}$$

Subtraction of Decimals

Rule

Place the numbers according to their value; then subtract as in whole numbers, and point off the decimals as in addition.

Examples.

From 714, 325 take 34, 6810

$$\begin{array}{r} 714,3250 \\ 34,6810 \\ \hline 679,6440 \end{array}$$

From 113,1384 take 25, 41

$$\begin{array}{r} 113,1384 \\ 25,41 \\ \hline 87,7284 \end{array}$$

What is the difference between 287 and 2115

$$\begin{array}{r} 287,000 \\ 3,115 \\ \hline 283,885 \end{array}$$

$$\begin{array}{r} 6700 \\ 72 \\ \hline 6628 \end{array}$$

Multiplication of Decimals

Rule

Whether they are mixed numbers or pure decimals place the factors and multiply them as in whole numbers. Point off so many figures from the product as there are decimal places in the Product supply the defect by prefixing cyphers

Examples.

Multiply 21,72 by 65

$$\begin{array}{r} 21,72 \\ 65 \\ \hline 10860 \\ 13152 \\ \hline 1411,80 \end{array}$$

Multiply 25,25 by 13,17

$$\begin{array}{r} 25,25 \\ 13,17 \\ \hline 33250 \\ 328125 \\ \hline 332,500 \end{array}$$

Division of Decimals

Rule

1 The places of decimals parts in the divisor and quotient counted together must be always equal to those in the dividend therefore divided as in whole numbers and from the right hand

of the quotient point off so many places for decimal as the decimal places in the dividend exceed those in the divisor

2 If the places of the quotient be not so many as the rule requires supply the defect by prefixing cyphers to the left hand

3 If at any time there be a remainder as the decimal places in the divisor be more than those in the dividend cyphers may be annexed to the dividend or to the remainder and the quotient carried on to any

degree of exactness

Examples

Divide 173248 by 375

$$\begin{array}{r} 375 \overline{) 173248} \quad (4638614 \\ \underline{1500} \\ 2324 \\ \underline{2250} \\ 748 \\ \underline{7125} \\ 3550 \\ \underline{3000} \\ 5500 \\ \underline{5250} \\ 250 \\ \underline{225} \\ 25 \end{array}$$

Divide 24 by 531

$$\begin{array}{r} 531 \overline{) 20000} \quad (037 \\ \underline{1593} \\ 4070 \\ \underline{3717} \\ 353 \end{array}$$

Divide 012 by 005

$$\begin{array}{r} 005 \overline{) 012} \quad (24 \\ \underline{10} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

Reduce vulgar Fractions to Decimals

Rule

Annex a cypher to the numerator and divide it by the denominator annexing a cypher continually to the remainder the quotient will be the decimal required

Examples

Reduce $\frac{1}{2}$ and $\frac{3}{4}$ to decimals Answer .25, .75

$$\begin{array}{r} 1) 100 \quad (25 \\ \underline{20} \\ 80 \\ \underline{80} \\ 0 \end{array} \quad \begin{array}{r} 3) 100 \quad (75 \\ \underline{30} \\ 70 \\ \underline{70} \\ 0 \end{array}$$

Reduce $\frac{2}{5}$, $\frac{1}{5}$, and $\frac{9}{11}$ to decimals

$$\begin{array}{r} 16) 500 \quad (3125 \\ \underline{24} \\ 260 \\ \underline{232} \\ 280 \\ \underline{256} \\ 240 \\ \underline{224} \\ 160 \\ \underline{160} \\ 0 \end{array} \quad \begin{array}{r} 4) 100 \quad (25 \\ \underline{16} \\ 84 \\ \underline{84} \\ 0 \end{array}$$

$$\begin{array}{r} 112) 900 \quad (00797 + \\ \underline{784} \\ 1160 \\ \underline{1008} \\ 1520 \\ \underline{1344} \\ 176 \end{array}$$



Case 2

To reduce numbers of difference denominations as of money, weight and measures to their decimal value

Rule

Write the given numbers perpendicularly under each other for dividends proceeding orderly from the least to the greatest

Examples

Reduce 13s 5d to the decimal of a pound
Reduce 12 pints 19gals to the decimal of a cunce

$$\begin{array}{r} 4/10 \\ 12/55 \\ 20/134583 \\ \hline 67294 \end{array}$$

$$\begin{array}{r} 24/140 \\ 20/125532 \\ \hline 6291 \end{array}$$

Case 3

To find the value of any given decimal in the terms of an integer

Examples

What is the value of 7396th of a pound

$$\begin{array}{r} 73960 \\ 12/179360 \\ \hline 158710 \\ 12/158710 \\ \hline 132250 \\ 12/132250 \\ \hline 1102080 \end{array}$$

What is the value of 768 of pound Troy

$$\begin{array}{r} 768 \\ 12/1536 \\ \hline 168 \\ 12/168 \\ \hline 1416 \\ 12/1416 \\ \hline 1180 \\ 12/1180 \\ \hline 9833 \end{array}$$

Supplement to Fractions

Examples

If a pile of wood 161st feet in width and 7th high how many cords does it contain

$$\begin{array}{r} 118 \\ 11/118 \\ \hline 1070 \\ 11/1070 \\ \hline 975 \\ 11/975 \\ \hline 880 \\ 11/880 \\ \hline 800 \\ 11/800 \\ \hline 727 \\ 11/727 \\ \hline 660 \\ 11/660 \\ \hline 600 \\ 11/600 \\ \hline 545 \\ 11/545 \\ \hline 490 \\ 11/490 \\ \hline 435 \\ 11/435 \\ \hline 380 \\ 11/380 \\ \hline 325 \\ 11/325 \\ \hline 270 \\ 11/270 \\ \hline 215 \\ 11/215 \\ \hline 160 \\ 11/160 \\ \hline 105 \\ 11/105 \\ \hline 50 \\ 11/50 \\ \hline 45 \end{array}$$

What is the value of 125th a day

$$\begin{array}{r} 125 \\ 11/125 \\ \hline 1140 \\ 11/1140 \\ \hline 1030 \\ 11/1030 \\ \hline 920 \\ 11/920 \\ \hline 810 \\ 11/810 \\ \hline 700 \\ 11/700 \\ \hline 590 \\ 11/590 \\ \hline 480 \\ 11/480 \\ \hline 370 \\ 11/370 \\ \hline 260 \\ 11/260 \\ \hline 150 \\ 11/150 \\ \hline 40 \end{array}$$

Multiply 68th by 5th

$$\begin{array}{r} 685 \\ 5/3425 \\ \hline 34125 \\ 5/315575 \end{array}$$

If a load of wood 169 feet long 32 feet wide and 4 feet high how many square feet does it contain

$$\begin{array}{r} 35 \\ 4/140 \\ \hline 27 \\ 4/108 \\ \hline 315 \end{array}$$

What is the value of 625 of a shilling

$$\begin{array}{r} 625 \\ 4/2500 \\ \hline 2500 \\ 4/10000 \\ \hline 25000 \end{array}$$

Reduce 100000 to the decimal of a toll

$$\begin{array}{r} 1650 \\ 2878 \\ 4618185714 \\ 20306696425 \\ \hline 15534871 \end{array}$$

Federal Money

Federal money is the coin of the united states established by Congress A.D. 1792 of all coins this is the most simple and the operations in it most easy. The denominations are in a decimal proportion as exhibited in the following

Addition of Federal Money

Add 1 eagle 3 eagles 7 dollars
5 cents 10 dollars 6 dimes 4 cents
3 mills 75 cents 8 mills 40 dollars
1 cent together

160
3705
26643
758
4009
18264543

If I am indebted 50 dollars
112 dollars 98 cents 113 dolls 18 cts
15 dollars 21 dolls 5 cts 20 dolls
20 dollars 25 dolls 30 dolls 32
cts and 10 dollars what is the

sum which I owe
Dolls cts
50
112.98
113.15
15
21.50
200
25.17
20
40.00
781.15

Subtraction of Federal Money

from \$863.17 take \$87.50

863.17
87.50
775.67

From \$871 take \$87.50

871.00
87.50
783.50

Multiplication of Federal Money

Multiply \$1635 by \$3240

1635
3240
45610
50540
53445
22905
78600110

Multiply \$24.25 by \$2563

2425
1363
14085
148050
74025
24678
3362025
100

Division of Federal Money

Divide \$37.50 equally among 15 men what will each man receive

37.50
15
2.50

Divide \$1675 by 27

1675
27
62

Supplement to federal money

A man dies leaving 30 estates of \$71.00 there are 40 are demands against the estate of \$39876.74 the residue is to be divided between 2000 the whole what will each one receive

71000
39876.74
71723.26
2000
35.86163

1225
133
5675
3675
1225
162925
4376
774301

What will 3 hogheads of sugar
cost each weight 5 bush 2 qrs
7 lb at 16 cts 7 mills per lb

$$\begin{array}{r} 327 \\ 4 \\ \hline 14 \\ 28 \\ \hline 117 \\ 28 \\ \hline 399 \\ 3 \\ \hline 1197 \\ 167 \\ \hline 2377 \\ 7182 \end{array}$$

1127
99899

Interest is the allowance given for the use of money by the
lender to the borrower. It is computed at so many dollars
for a greater cash hundred lent for a year (per annum) and a like propor-
tion for a greater or less time.

Write down half the greatest even number of months for a multiple
if there be an odd month it must be reckoned 30 days for which and the
given days if any seek how many times you can have six in the sum of
them place the figures for a decimal at the right hand of half the
even number of months already found by which multiply the prin-
ciple observing in pointing off the product to remove the decimal po-
or separator two figures from its naturall place towards the left
that is point off two more places for decimals in the product
these there are decimal places in the left hand of the point
will be multiplied and multiplied together

Divide seven thousand six dol-
lars one cent and three mills
by five hundred seventy six
dollar thirty four cts and two
mills

$$\begin{array}{r} 576342 \overline{) 7606013} \quad (12158 \text{ mills} \\ \underline{1122893} \\ 1152284 \\ \underline{399090} \\ 576342 \\ \underline{5777480} \\ 1531710 \\ \underline{5457700} \\ 2581710 \\ \underline{575190} \end{array}$$

What is the interests of \$85.13
for 2 years and 6 months

$$\begin{array}{r} 593 \\ 16 \\ \hline 3558 \end{array}$$

What is the interest of \$11
ids for 27 years

$$\begin{array}{r} 91 \\ 162 \\ \hline 182 \\ 546 \\ 41 \end{array}$$

What is the interest of \$378.
for 2 years and 6 months at 4 per
cent

$$\begin{array}{r} 15784 \\ 15 \\ \hline 68920 \\ 15784 \\ \hline 6 \overline{) 206760} \\ 3446 \\ \hline 6 \overline{) 182200} \end{array}$$

What is the interest of \$225
for 1 month 19 days at 3 per cent

$$\begin{array}{r} 229 \\ 5\frac{1}{2} \\ \hline 1832 \\ 38 \\ \hline 21870 \end{array}$$

What is the interest of \$62 for 3 years and 2 months

$$\begin{array}{r} 1762 \\ 19 \\ \hline 60858 \\ 6762 \\ \hline 128478 \end{array}$$

What is the interest of \$2000
for 10 days

33) 2807032110
1 1
~~2807032110~~
4568733 "
4567733 "

What is the interest of 1908

for 10 months get 8 per cent

$$\begin{array}{r} 7907 \\ 5 \\ \hline 3 \overline{) 39535} \\ \underline{13275} \\ 52710 \end{array}$$

What is the interest of \$18 for 2 years 14 days at 7 percent?

$$\begin{array}{r} 100 \\ 222 \\ \hline 36 \\ 36 \\ \hline 100 \\ 52202 \\ \hline 367 \\ \hline 3567 \end{array}$$

Continued

What is the interest of \$100
for 1 year and 3 months

$$\begin{array}{r} 1600 \\ 75 \\ \hline 8000 \\ 11200 \\ \hline 19200 \end{array}$$

79000
What is the interest of 100
£ per 1 year and 7 months & days

$$\begin{array}{r} 10561 \\ 96 \\ \hline 105366 \\ 95049 \\ \hline 1013856 \end{array}$$

What is the interest of \$836
for 5 years 10 months and 15 days

$$\begin{array}{r} 1031 \\ 350 \\ \hline 591800 \\ 13500 \\ \hline 2742600 \\ 3918 \\ \hline 2742600 \end{array}$$

What is the interest of \$1167¹/₂ for 1 year and 4 months.

$$\begin{array}{r} 9162 \\ 8 \\ \hline 73336 \end{array}$$

What is the interest of \$100 for 1 year and 11 months

$$\begin{array}{r} 5811 \\ 115 \\ \hline 29055 \\ 5811 \\ 9811 \\ \hline 66826 \end{array}$$

What is the interest of 86
for 9 months

$$\begin{array}{r} 85 \\ 45 \\ \hline 430 \\ 344 \\ \hline 8440 \end{array}$$

What is the interest of an estate
for 2 years or more and
4 days

$$\begin{array}{r}
 24250 \\
 160 \\
 \hline
 4873800 \\
 81230 \\
 23071 \\
 13071 \\
 \hline
 3030952
 \end{array}$$

What is the interest of \$ 75
17 cts for 11 days

$$\begin{array}{r} 9317 \\ 15\% \\ \hline 9317 \\ 13975 \\ \hline 17081 \end{array}$$

S R T T H B

Continued
Exercises.

What is the interest of
85.19 for 7 months

$$\begin{array}{r} 519 \\ 35 \\ \hline 2595 \\ 1887 \end{array}$$

What is the interest of two hundred dollars and six cts

4 days 2000s
 $\frac{666}{666}$
 13,336

What is the interest
of half a mill 50 years

$$\begin{array}{r} 000005 \\ \hline 6 \\ \hline 000050 \\ \hline 567 \\ \hline 000210 \\ \hline 000100 \\ \hline 000050 \\ \hline 22010 \end{array}$$

Handwritten signatures and initials, including a large 'B' and a small '1' at the bottom.

What is the interest of 3107
for 3 years 6 months and 15 days

$$\begin{array}{r} 107 \\ 212 \\ \hline 274 \\ 407 \\ 14 \end{array}$$

What is the interest of nine
45 years 7 months and 11 days

$$\begin{array}{r} 4,57 \\ 2 \overline{) 557} \\ \underline{273} \\ 2846 \\ \underline{2462} \\ 171 \end{array}$$

~~What is the interest of~~
A note of \$365.14 was given

Dec 17 97 June 1, 1800 he paid 8
16 what was there due Sept 11, 1800
1800 9 11 36 5 34

$$\begin{array}{r}
 1800 \ 9 \ 11 \ 36534 \\
 1800 \ 5 \ 74 \ 150 \ 2\frac{1}{2} \\
 \hline
 6537 \\
 12179 \\
 12179 \\
 \hline
 5506908 \\
 36537 \\
 \hline
 42041 \\
 9716 \\
 \hline
 55325
 \end{array}$$

$$\begin{array}{r}
 152 \\
 761425 \\
 32325 \\
 10775 \\
 10775 \\
 \hline
 1506425 \\
 32325 \\
 \hline
 32325
 \end{array}$$

Continued Exercises

B's note of \$175 was given
Dec 9 1810 on which was endorsed
One year's interest what was there
Due June 1 1805

$$\begin{array}{r} 175 \\ 134 \frac{1}{2} \\ \hline 1400 \\ 175 \\ \hline 175 \end{array}$$

D's note of two hundred
three dollars and seventeen cts only
was given Oct 5 1800 on interest
after 9 months Jan 5 1809 he paid
fifty dollars what was there due
May 2d 1811

$$\begin{array}{r} 20317 \\ 50 \\ \hline 15317 \\ 139 \frac{1}{2} \\ \hline 133553 \\ 45951 \\ \hline 15511 \\ 1668 \\ \hline 2136721 \\ 15317 \\ \hline 17453 \end{array}$$

B's note of \$5185 was given
June 6 1801 on interest after
90 days what was there due
Feb 9 1802

$$\begin{array}{r} 5185 \\ 5625 \frac{1}{2} \\ \hline 28375 \\ 11350 \\ \hline 17237 \\ 144712 \\ \hline 5675 \\ 5819 \end{array}$$

E's note of eight hundred and
sixty dollars and five cts was given
Nov 17 1800 on interest after
90 days Feb 4 1805 he paid one
hundred eighty six dollars and
six cts what was there due Dec
22 1807

$$\begin{array}{r} 81005 \\ 1391 \\ \hline 185045 \\ 261015 \\ \hline 174080 \\ 20779195 \\ 89005 \\ \hline 107799 \\ 10606 \\ \hline 89193 \\ 142 \\ \hline 170386 \\ 624351 \\ \hline 79193 \\ 15341106 \\ 89193 \\ \hline 104534 \end{array}$$

Continued Exercises

What is the interest of
£41 11s 3d for 1 year and
2 months

$$\begin{array}{r} £ \quad s \quad d \\ 41 \quad 11 \quad 3 \frac{1}{2} \\ \hline 170 \quad 18 \quad 153 \\ \hline 18 \quad 0 \quad 8 \\ 102 \\ \hline 226 \quad 10 \quad 1 \frac{1}{2} \\ 407 \end{array}$$

Supposing a note of \$517 92 dated July 5 1807 on which were the
following payments Sept 13 1809 \$20 804 March 10 1800 \$76
What was the sum due Jan 1 1801

$$\begin{array}{r} 51792 \\ 131 \frac{3}{4} \\ \hline 31796 \\ 95576 \\ \hline 3179297 \\ 10597 \\ \hline 4415547 \\ 531792 \\ \hline 559685 \\ 20804 \\ \hline 567715 \frac{1}{2} \\ 1564697 \\ \hline 303266 \\ 15016 \\ \hline 4475175 \\ 15633 \\ \hline 156106 \\ 46 \\ \hline 80106 \\ 48 \frac{1}{2} \\ \hline 640845 \\ 320423 \\ \hline 40053 \\ 5885131 \\ \hline 80106 \\ 83991 \end{array}$$

Compound Interest

Is calculated by adding the interest to the principal at the end of each year and making the amount the principal for the succeeding year then the given principal subtracted from the last amount the remainder will be the compound interest &c

Examples

$ \begin{array}{r} 500 \\ 15000 \\ \hline 15500 \\ 45000 \\ \hline 60500 \\ 151650 \\ \hline 157700 \\ 47310 \\ \hline 162430 \end{array} $	$ \begin{array}{r} 1262446 \\ 246 \\ \hline 1262692 \\ 3751420 \\ \hline 2524952 \\ 3297944356 \text{ Amount for 4 years} \\ 36 \\ \hline 1787444 \\ 293552 \\ \hline 1816799 \text{ interest for 4 yrs and 6 days} \\ 291244 \text{ amount for 4 years added} \\ \hline 2108043 \end{array} $
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Compound Multiplication

Compound multiplication is when the multiplicand consists of several denomination, it is particularly useful in finding the value of Goods

Ans Pounds Shillings pence farth in Dollars cts mills

Case 1

When the quantity does not exceed 12 yard pounds &c set down the price of one yard or pound and place qu underneath the lowest denomination and the product will be the answer for a multiplier begin by multiplying the lowest denomination and carry by and from the product point of so with the same rules from one denomination to another as in compound addition

In all cases

Multiply the price and the quantity together according to the rules of multiplication in decimals fractions Multiply as in simple multiplication

Continued

Examples

What will 6 yards of cloth cost at \$1.50 per yard

\$	1	50
1	10	0
6		
9	0	0

507
6
3042

Case 2 When the quantity exceeds and is any number within the multiplication table multiply by two such numbers as when multiplied together will produce the given quantity If two numbers will not do this exactly multiply by two such numbers as come the nearest to it and by the deficiency or excess multiply the multiplicand and the product added to or subtracted from the first product as the case may require gives the answer

What will 4.2 yards of cloth cost at \$2.625 per yard

\$	2	62	5
4			
10	5	0	0
105	00	0	
110	25	0	

What will 2 pounds of sugar cost at 50.125 per lb

50	12	5
2		
100	25	

What will 4.2 yards of cloth cost at 15s 9d per yards

£	15	9
4		
63	6	

What will 125 yards of cloth cost at 93 cents per yard

93
125
11625

Ans 33 1 6

Continued

What will 81 pounds of tea
cost at 30 58s per lb

$$\begin{array}{r} 05813 \\ 81 \\ \hline 05813 \\ 2915 \\ \hline 29753 \end{array}$$

Case 23

When the multiplier that is
the quantity exceeds 144 multiply
first by 10 and this product again
by 10 which will give the price of 100
yards & and if the quantity be even
hundreds multiply the price of 100 by
the number of hundreds in the question
and the product will be the answer
if there be odd numbers multiply the
price of 10 by the numbers of tens and
the price of unity or 1 by the numbers
of units then these several products added
together will be the answer

What will 312 yards of cloth
cost at 10s 14d per yard

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ 0 \quad 10 \quad 0 \quad 6 \text{ } + \text{ } 10 \text{ } = \text{ } 16 \text{ } \\ 102 \text{ } \times 3 \text{ } = \text{ } 306 \text{ } \\ 5 \text{ } \times 5 \text{ } \times 2 \text{ } = \text{ } 50 \text{ } \\ \hline 5 \text{ } \quad 5 \text{ } \quad 10 \text{ } \end{array}$$

$$\begin{array}{r} 52 \text{ } \quad 14 \text{ } \quad 2 \text{ } \\ 158 \text{ } \quad 2 \text{ } \quad 6 \text{ } \\ 10 \text{ } \quad 10 \text{ } \quad 10 \text{ } \\ 4 \text{ } \quad 4 \text{ } \quad 4 \text{ } \\ \hline \text{£} 172 \text{ } \quad 14 \text{ } \quad 5 \text{ } \text{ pence} \end{array}$$

What will 150 yards of cloth
cost at 42s per yard

$$\begin{array}{r} 1250 \\ 150 \\ \hline 18750 \\ 125 \\ \hline 94250 \end{array}$$

What will 562 yards of cloth
cost at 44s per yard

$$\begin{array}{r} \text{Yards} \quad 562 \\ \text{£} \quad \text{s} \quad \text{d} \\ 562 \times 44 \\ \hline 2252 \\ 2252 \\ \hline 82424 \text{ } 0 \text{ } 9 \end{array}$$

What will 300 yards of cloth
cost at 145s per yard

$$\begin{array}{r} \text{Dolls} \text{ } \text{cts} \\ 1754 \\ 328 \\ \hline 14056 \\ 3514 \\ \hline 57620 \end{array}$$

Continued

What will 124 yards of cloth
cost at 12s 3d per yard

$$\begin{array}{r} \text{£} \quad \text{s} \quad \text{d} \\ 0 \text{ } 12 \text{ } 3 \text{ } \times 4 \text{ } = \text{ } 50 \text{ } \\ 10 \text{ } \times 10 \text{ } \times 1 \text{ } = \text{ } 100 \text{ } \\ \hline 6 \text{ } \quad 6 \text{ } \quad 8 \text{ } \times 2 \text{ } \\ \hline 68 \text{ } \quad 6 \text{ } \quad 6 \end{array}$$

$$\begin{array}{r} 380 \text{ } \quad 0 \text{ } \quad 0 \\ 12 \text{ } \quad 13 \text{ } \quad 4 \\ 2 \text{ } \quad 10 \text{ } \quad 0 \end{array}$$

$$595 \text{ } \quad 4 \text{ } \quad 0$$

Supplement to compound multiplication

If a man has 35 silver cups each
If a man travel 34 miles 3 furlongs
If a man travel 102 3 pence 16 pence and 12 pence in one day how far will
much silver do they all contain he travel in 62 day

$$\begin{array}{r} \text{lb} \quad \text{oz} \quad \text{pwt} \quad \text{grs} \\ 0 \text{ } 1 \text{ } 3 \text{ } 16 \times 2 = 32 \\ 3 \times 12 = 36 \\ \hline 0 \text{ } 3 \text{ } 11 \text{ } 0 \\ \hline 3 \text{ } 6 \text{ } 12 \text{ } 0 \\ 0 \text{ } 2 \text{ } 7 \text{ } 0 \\ \hline 3 \text{ } 8 \text{ } 19 \text{ } 0 \end{array}$$

$$\begin{array}{r} \text{M.} \quad \text{fur.} \quad \text{p.} \\ 34 \text{ } 3 \text{ } 17 \times 2 \\ 3 \text{ } 16 \times 10 \\ \hline 206 \text{ } 4 \text{ } 22 \\ 10 \\ \hline 2065 \text{ } 5 \text{ } 20 \\ 60 \text{ } 6 \text{ } 34 \\ \hline 2134 \text{ } 4 \text{ } 14 \end{array}$$

Compound Division

Pounds Shillings pence ^{fourth} Dollars cents mills
 Cases in all cases

When the divisor that is the Divide the quantity and point off
 quantity does not exceed 12 begin at so many places for cents and mills
 the highest denomination and in these the product as there are places
 manner of short division find hundred cents and mills in the divisions
 many times the divisor is contained off the quantity be a composite number
 in its place the quotient under its order that is produced by the number
 one denomination and if any thing remains multiplication of two numbers the quotient
 and reduce it to the next less denomination may be verified by dividing
 multiplication and divide as before as the price first by one of those
 proceed through all the denomination numbers and this quotient by the
 other

If the quantity exceeds 12 and
 there be any two numbers which will
 divided together will produce it divide
 the price first by one of those numbers
 and this quotient by the other

Examples

If 24 lb of tea cost £2 7s 12d
 What is it per lb.

$$\begin{array}{r}
 \text{£ } 2 \text{ } 7 \text{ } 12 \\
 24 \overline{) 2572} \\
 \underline{48} \\
 1132 \\
 \underline{96} \\
 1720 \\
 \underline{168} \\
 40
 \end{array}$$

If 24 lb of tea cost at 87¢
 What is that per lb

$$\begin{array}{r}
 24 \overline{) 2088} \\
 \underline{48} \\
 1120 \\
 \underline{96} \\
 1600 \\
 \underline{168} \\
 1200 \\
 \underline{1200} \\
 0
 \end{array}$$

This is the property of ^{Mr}
 Samuel Rush in the year of
 Our lord AD 1827

Steal not this Book

My honest friend for
 Fear the gallies will be
 your end Amen.

young lambs to sell young lambs to sell
 If I had as much money as I could tell
 I need never cry young lambs to sell