



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

Ray's arithmetic

Joseph Ray

22
25

F 2207 110.70.729

**HARVARD COLLEGE
LIBRARY**



**GIFT OF THE
GRADUATE SCHOOL
OF EDUCATION**

(



3 2044 097 002 026

15

ECLECTIC EDUCATIONAL SERIES.

RAY'S ARITHMETIC, FIRST BOOK.

P R I M A R Y
LESSONS AND TABLES IN
A R I T H M E T I C :
FOR YOUNG LEARNERS.

By JOSEPH RAY, M. D.,
LATE PROFESSOR OF MATHEMATICS IN WOODWARD COLLEGE.

STEREOTYPE EDITION.

NEW-YORK ❖ CINCINNATI ❖ CHICAGO
AMERICAN BOOK COMPANY

FROM THE PRESS OF
VAN ANTWERP, BRAGG, & CO.

Edw. T. 118, 90, 729

SPECIAL NOTICE.

Ray's Arithmetics have recently been thoroughly revised,
and issued as—

RAY'S NEW ARITHMETICS.

Ray's New Primary Arithmetic.

Ray's New Intellectual Arithmetic.

Ray's New Practical Arithmetic.

RAY'S TWO-BOOK SERIES.

Ray's New Elementary Arithmetic.

Ray's New Practical Arithmetic.

FOR HIGH SCHOOLS AND COLLEGES.

Ray's New Higher Arithmetic.

The many changes in business transactions, as well as the advance in methods of instruction, have made such revision necessary. The New Arithmetics are sold for the *same low prices* as the old editions, notwithstanding the paper, printing, binding, and general appearance are far superior. Special terms for exchange of the new series for the old, can be had by application to the publishers.

MAY 1 1885
GRADUATE
JULY 1 1885

Entered according to Act of Congress, in the year Eighteen Hundred and Fifty-Seven, by WINTHROP B. SMITH, in the Clerk's Office of the District Court of the United States, for the Southern District of Ohio.

COPYRIGHT,

1885,

BY VAN ANTWERP, BRAGG & CO.

P R E F A C E.

ONE of the most important improvements in the art of instruction, is that by which the study of Arithmetic has been rendered interesting and attractive to children.

In the preparation of the following pages, extreme care has been used in making the lessons gradually and almost imperceptibly progressive, so that the little learner is all the while unconsciously, but thoroughly mastering the introductory principles of numbers.

The study of Mental Arithmetic by quite young learners can not be too highly appreciated: it is an exciting and profitable exercise of the juvenile mind, develops the faculties, and gives them valuable discipline for a more vigorous pursuit of other studies in which they may be engaged.

In presenting a remodeled and greatly improved edition of this volume, widely known as Ray's Arithmetic, Part First, grateful acknowledgments are made to the numerous educators who have extended to this, as well as to the other mathematical works by the same author, a large approbation and a wide and increasing patronage.

The method of giving the tables in reverse order, (as on pages 10 to 60), each table followed by simple questions, was presented in 1834, in "Calculations for the Head,"—a small tract on the oral method of instruction,—and has been complimented by adoption in the Primary Table Book of the distinguished Professor Davies.

DIRECTIONS TO TEACHERS.

THE following suggestions are respectfully submitted to the consideration of Teachers, believing they will be found especially valuable to those who are inexperienced in teaching *young* pupils this important branch of study.

Let the Pupil have the book before him until able to solve the questions readily; then thoroughly and repeatedly review *without* it, the Teacher reading the question distinctly, and the pupil answering it. The learner, in answering, should repeat the problem to be solved.

Teach one thing at a time, and teach it thoroughly. This is an important direction as regards all branches of study, but should be more particularly observed in acquiring a knowledge of the elementary principles of Arithmetic, since every successive step in the pupil's progress, depends, in a great degree, upon what has preceded it.

Under no circumstances permit the pupil to leave a lesson until he has entirely mastered it, and is able, not only to solve all the questions it contains, but to solve them readily and understandingly, so that he shall *know* he is right, and be able to tell *why* he knows it.

To awaken and fix the attention of the class, let the problems be assigned promiscuously, not in rotation: allow one pupil to read the question, another to answer it, and a third to give the reasons. A strict observance of these directions will break up that dull, listless manner of recitation so frequently seen, and give to the exercise interest, spirit, and variety.

Let no considerations induce the Teacher to advance the pupil to "Ray's Intellectual Arithmetic," (Second Book,) until he has proved by sustaining a final rigid review that he has completely mastered this work.











ARITHMETIC.

NUMERATION AND NOTATION.

LESSON I.

TO TEACHERS.—The object of this lesson is to teach children to count in words: that is, to express in words the number denoting a unit, or a collection of units. Also, to show the **FIGURE** that represents each number, as high as **TEN**.

Here is a picture of some balls: the pupil must learn to count them by pointing to each, and saying, *one: one, two: one, two, three, etc.*

	. . . . .	one, .	1.
	. . . . .	two, .	2.
	. . . . .	three, .	3.
	. . . . .	four, .	4.
	. . . . .	five, .	5.
	. . . . .	six, .	6.
	. . . . .	seven, .	7.
	. . . . .	eight, .	8.
	. . . . .	nine, .	9.
	. . . . .	ten, .	10.

LESSON II.

TO TEACHERS.—The object of the *four* following lessons, is to teach the figures corresponding to the numbers, as high as ONE HUNDRED.

One 1	Eleven . . . 11	Twenty-one . 21
Two 2	Twelve . . . 12	Twenty-two . 22
Three 3	Thirteen . . 13	Twenty-three . 23
Four 4	Fourteen . . 14	Twenty-four . 24
Five 5	Fifteen . . . 15	Twenty-five . 25
Six 6	Sixteen . . . 16	Twenty-six . . 26
Seven 7	Seventeen . . 17	Twenty-seven . 27
Eight 8	Eighteen . . 18	Twenty-eight . 28
Nine 9	Nineteen . . 19	Twenty-nine . 29
TEN 10	TWENTY . . . 20	THIRTY 30

LESSON III.

TO TEACHERS.—Very young pupils may omit this, and the three following lessons, until some progress has been made in Addition and Subtraction.

Thirty-one . 31	Forty-one . . 41	Fifty-one . . . 51
Thirty-two . 32	Forty-two . . 42	Fifty-two . . . 52
Thirty-three . 33	Forty-three . 43	Fifty-three . . 53
Thirty-four . 34	Forty-four . . 44	Fifty-four . . . 54
Thirty-five . 35	Forty-five . . 45	Fifty-five . . . 55
Thirty-six . . 36	Forty-six . . . 46	Fifty-six 56
Thirty-seven . 37	Forty-seven . 47	Fifty-seven . . 57
Thirty-eight . 38	Forty-eight . 48	Fifty-eight . . 58
Thirty-nine . 39	Forty-nine . . 49	Fifty-nine . . . 59
FORTY 40	FIFTY 50	SIXTY 60

LESSON IV.

Sixty-one . . 61	Seventy-five . 75	Eighty-nine . 89
Sixty-two . . 62	Seventy-six . 76	NINETY . . 90
Sixty-three . 63	Seventy-seven 77	Ninety-one . 91
Sixty-four . . 64	Seventy-eight 78	Ninety-two . 92
Sixty-five . . 65	Seventy-nine . 79	Ninety-three . 93
Sixty-six . . 66	EIGHTY . . 80	Ninety-four . 94
Sixty-seven . 67	Eighty-one . 81	Ninety-five . 95
Sixty-eight . 68	Eighty-two . 82	Ninety-six . 96
Sixty-nine . . 69	Eighty-three . 83	Ninety-seven . 97
SEVENTY . . 70	Eighty-four . 84	Ninety-eight . 98
Seventy-one . 71	Eighty-five . 85	Ninety-nine . 99
Seventy-two . 72	Eighty-six . 86	ONE HUNDRED 100
Seventy-three 73	Eighty-seven 87	
Seventy-four . 74	Eighty-eight . 88	

LESSON V.

FIGURES TO BE READ.

1	15	30	48	55	62	67
3	18	39	47	83	91	53
5	16	40	74	56	94	57
2	19	38	87	65	98	59
4	21	35	78	54	84	85
9	20	32	88	89	95	58
8	25	37	90	98	97	72
7	24	33	99	60	79	66
6	23	31	46	69	70	88
10	27	34	64	96	80	44
13	22	36	50	92	75	92
12	26	42	81	61	71	29
11	41	29	51	68	77	72
14	49	45	82	86	73	27
17	28	43	52	63	76	100

LESSON VI.

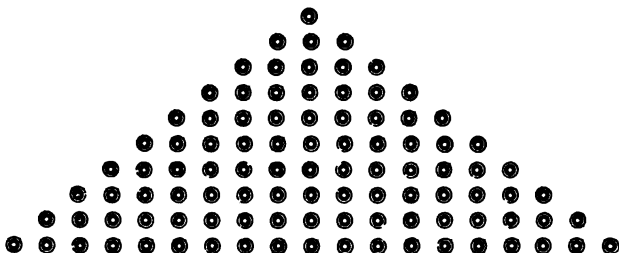
What figure stands for five? What stands for nine? What figures stand for ten? What stand for thirteen? What, for nineteen? What for twenty? What for twenty-five?

What figures stand for thirty-two? What stand for thirty-six? What for forty? What for twenty-eight? What for thirty-nine?

What figures stand for fifty-two? What for sixty-three? For twenty-seven? For seventy-two? What for sixty-seven? For seventy-six? What for eighty-seven? For seventy-eight? What for ninety-three? For eighty-nine? For ninety-eight? What for one hundred?

LESSON VII.

TO TEACHERS.—This lesson is designed to make pupils familiar with the relative magnitudes of numbers.



How many balls in the first (top) line? How many in the first and second lines? How many in the first, second, and third lines? How many in the first four lines? How many in the first five lines? How many in the first six lines? How many in the first seven lines? How many in the first eight lines? How many in all?

ADDITION.—LESSON I.

TO TEACHERS.—After the pupils are familiar with the lessons, they should be exercised with an Arithmometer. By arranging the balls so as to correspond with the lesson, the whole class may be exercised at the same time: the youngest pupil will thus be able to understand every operation.

1. One orange and one orange are how many?

How many are 1 and 1?

○ ○

2. Two cakes and one cake are how many?

How many are 1 and 2?

○ ○ ○

3. Three cents and one cent are how many?

How many are 1 and 3?

○ ○ ○ ○

4. Four dollars and one dollar are how many?

How many are 1 and 4?

○ ○ ○ ○ ○

5. Five marbles and one marble are how many?

How many are 1 and 5?

○ ○ ○ ○ ○ ○

6. Six apples and one apple are how many?

How many are 1 and 6?

○ ○ ○ ○ ○ ○ ○

7. Seven books and one book are how many?

How many are 1 and 7?

○ ○ ○ ○ ○ ○ ○ ○

8. Eight balls and one ball are how many?

How many are 1 and 8?

○ ○ ○ ○ ○ ○ ○ ○ ○

9. Nine trees and one tree are how many?

How many are 1 and 9?

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

LESSON II.*

1 and 1 are	2	1 and 1 are	2
2 and 1 are	3	1 and 2 are	3
3 and 1 are	4	1 and 3 are	4
4 and 1 are	5	1 and 4 are	5
5 and 1 are	6	1 and 5 are	6
6 and 1 are	7	1 and 6 are	7
7 and 1 are	8	1 and 7 are	8
8 and 1 are	9	1 and 8 are	9
9 and 1 are	10	1 and 9 are	10
10 and 1 are	11	1 and 10 are	11

1. Daniel had 1 apple, and his mother gave him 1 more: how many apples had he then?
Ans. 2. Why? Because 1 and 1 are 2.

2. Francis had 2 cents, and his mother gave him 1 cent more: how many had he then? Why?

3. John had 1 raisin, and his sister gave him 3 more: how many raisins had he then? Why?

4. Mary had 4 pears, and her mother gave her 1 more: how many pears had she then? Why?

5. I had 1 cherry, and my brother gave me 5 more: how many did I then have? Why?

6. George has 6 cents, and John has 1: how many cents have both? Why?

7. One plum and 7 plums are how many?

8. Eight oranges and 1 orange are how many?

9. One peach and 9 peaches are how many?

10. Ten cents and 1 cent are how many?

* This mode of presenting the tables, up to ten, was introduced into "Ray's Calculations for the Head," in 1834.

LESSON III.*

2 and 1 are 3
2 and 2 are 4
2 and 3 are 5
2 and 4 are 6
2 and 5 are 7
2 and 6 are 8
2 and 7 are 9
2 and 8 are 10
2 and 9 are 11
2 and 10 are 12

1 and 2 are 3
2 and 2 are 4
3 and 2 are 5
4 and 2 are 6
5 and 2 are 7
6 and 2 are 8
7 and 2 are 9
8 and 2 are 10
9 and 2 are 11
10 and 2 are 12

1. William had 1 orange, and his sister gave him 2 more: how many oranges did he then have?
Ans. 3. Why? Because 1 and 2 are 3.

2. Mary had 2 birds, and a friend gave her 2 more: how many birds had she then? Why?

3. Daniel has 3 tops, and Francis has 2: how many do they both have? Why?

4. John had 2 chestnuts, and found 4 more: how many did he then have? Why?

5. Helen had 5 raisins, and her brother gave her 2 more: how many had she then? Why?

6. Ellen had 2 chickens, and her cousin gave her 6 more: how many had she then? Why?

7. John had 2 cakes, and his mother gave him 7 more: how many did he then have? Why?

8. Frank had 8 marbles, and found 2 more: how many did he then have? Why?

9. Harry caught 2 fish, and Edward caught 9: how many did both catch? Why?

10. How many are 10 and 2? 9 and 2?

LESSON IV.

3 and 1 are 4	1 and 3 are 4
3 and 2 are 5	2 and 3 are 5
3 and 3 are 6	3 and 3 are 6
3 and 4 are 7	4 and 3 are 7
3 and 5 are 8	5 and 3 are 8
3 and 6 are 9	6 and 3 are 9
3 and 7 are 10	7 and 3 are 10
3 and 8 are 11	8 and 3 are 11
3 and 9 are 12	9 and 3 are 12
3 and 10 are 13	10 and 3 are 13

1. Mary had 1 pin, and she found 3 more: how many pins had she then? Why?

2. Julius had 3 cents, and he found 2 more: how many cents had he then? Why?

3. Francis has 3 dimes in his hand, and 3 in his pocket: how many dimes has he? Why?

4. Emma has 4 apples: if her mother gives her 3 more, how many apples will she have? Why?

5. There are 3 pears on one limb, and 5 on another: how many pears on both? Why?

6. Mary has 6 pens, and Belle has 3: how many pens have both? Why?

7. Henry has 3 dogs, and Oliver has 7: how many dogs have both? Why?

8. Charles caught 8 rabbits, and Samuel caught 3: how many did both catch? Why?

9. Ada spent 3 cents for peaches, and 9 cents for plums: how much did she spend? Why?

10. My pencil cost 10 cents, and my pen 3 cents: how much did both cost? Why?

LESSON V.

4 and 1 are 5	1 and 4 are 5
4 and 2 are 6	2 and 4 are 6
4 and 3 are 7	3 and 4 are 7
4 and 4 are 8	4 and 4 are 8
4 and 5 are 9	5 and 4 are 9
4 and 6 are 10	6 and 4 are 10
4 and 7 are 11	7 and 4 are 11
4 and 8 are 12	8 and 4 are 12
4 and 9 are 13	9 and 4 are 13
4 and 10 are 14	10 and 4 are 14

1. Lucy had 1 cent, and her mother gave her 4 more: how many had she then? Why?

2. James had 4 marbles, and he found 2 more: how many had he then? Why?

3. Mary had 3 pins in one hand, and 4 in the other: how many had she in both? Why?

4. Francis has 4 chestnuts in his hand, and 4 in his pocket: how many in all? Why?

5. There are 5 horses in one field, and 4 in another: how many are there in both? Why?

6. Cora spent 4 cents for tape, and 6 cents for ribbon: how many cents did she spend? Why?

7. I had 7 apples, and bought 4 more: how many did I then have? Why?

8. If a lemon cost 4 cents, and an orange 8 cents, how much will both cost? Why?

9. I sold a calf for 9 dollars, and a sheep for 4 dollars: how much did I get for both? Why?

10. Samuel gave 4 cents for a pencil, and 10 cents for paper: how much did both cost? Why?

LESSON VI.

5 and 1 are 6
5 and 2 are 7
5 and 3 are 8
5 and 4 are 9
5 and 5 are 10
5 and 6 are 11
5 and 7 are 12
5 and 8 are 13
5 and 9 are 14
5 and 10 are 15

1 and 5 are 6
2 and 5 are 7
3 and 5 are 8
4 and 5 are 9
5 and 5 are 10
6 and 5 are 11
7 and 5 are 12
8 and 5 are 13
9 and 5 are 14
10 and 5 are 15

1. Thomas has 1 cent in one pocket, and 5 in another: how many cents has he? Why?

2. A hen has 5 black chickens, and 2 white ones: how many chickens has she? Why?

3. Three square blocks, and 5 square blocks, are how many square blocks? Why?

4. I gave 5 cents for a whistle, and 4 cents for a top: how much did I give for both? Why?

5. Emma had 5 cakes, and her mother gave her 5 more: how many had she then? Why?

6. There are 6 chairs in one room, and 5 in another: how many chairs in both? Why?

7. There are 5 boys in one class, and 7 in another: how many are there in both? Why?

8. If a melon cost 8 cents, and an orange 5 cents, how much will both cost? Why?

9. There are 5 letters in my name, and 9 in yours: how many letters in both names? Why?

10. If you put 10 balls by the side of 5 balls, how many balls will there be? Why?

LESSON VII.

6 and 1 are 7.
6 and 2 are 8
6 and 3 are 9
6 and 4 are 10
6 and 5 are 11
6 and 6 are 12
6 and 7 are 13
6 and 8 are 14
6 and 9 are 15
6 and 10 are 16

1 and 6 are 7
2 and 6 are 8
3 and 6 are 9
4 and 6 are 10
5 and 6 are 11
6 and 6 are 12
7 and 6 are 13
8 and 6 are 14
9 and 6 are 15
10 and 6 are 16

1. Lucy gave 1 cent for thread, and 6 cents for tape: how much did she give for both? Why?

2. A farmer has 6 cows in one field, and 2 in another: how many cows in all? Why?

3. James has 3 marbles in one pocket, and 6 in another: how many has he in both? Why?

4. Francis had 6 cents, and Mary 4 cents: how many cents had both? Why?

5. There are 5 pigs in one pen, and 6 in another: how many pigs in both? Why?

6. If you have 6 plums in each hand, how many plums will you have? Why?

7. Lucy gave 7 cents to a poor man, and had 6 cents left: how many had she at first? Why?

8. A man had 6 horses, and bought 8 more: how many horses did he then have? Why?

9. A lady traveled 9 miles by water, and 6 miles by land: how far did she travel? Why?

10. Frank has 10 figs, and Oliver has 6: how many have both? Why?

LESSON VIII.

7 and 1 are 8
7 and 2 are 9
7 and 3 are 10
7 and 4 are 11
7 and 5 are 12
7 and 6 are 13
7 and 7 are 14
7 and 8 are 15
7 and 9 are 16
7 and 10 are 17

1 and 7 are 8
2 and 7 are 9
3 and 7 are 10
4 and 7 are 11
5 and 7 are 12
6 and 7 are 13
7 and 7 are 14
8 and 7 are 15
9 and 7 are 16
10 and 7 are 17

1. Alonzo had 1 cent, and his mother gave him 7 more: how many had he then? Why?

2. If you place 7 marbles by the side of 2 marbles, how many marbles will there be? Why?

3. There are 3 sheep in one field, and 7 in another: how many sheep in both? Why?

4. There are 7 boys in one seat, and 4 in another: how many are there in both? Why?

5. There are 5 chairs in one room, and 7 in another: how many chairs in all? Why?

6. Thomas had 7 apples, and his mother gave him 6 more: how many had he then? Why?

7. I bought two melons at 7 cents each: how much did they cost? Why?

8. I paid 8 cents for a slate, and had 7 cents left: how many cents had I at first? Why?

9. Fanny had 7 roses, and she gathered 9 more: how many had she then? Why?

10. There are 10 chairs in one room, and 7 in another: how many chairs in both? Why?

LESSON IX.

8 and 1 are 9	1 and 8 are 9
8 and 2 are 10	2 and 8 are 10
8 and 3 are 11	3 and 8 are 11
8 and 4 are 12	4 and 8 are 12
8 and 5 are 13	5 and 8 are 13
8 and 6 are 14	6 and 8 are 14
8 and 7 are 15	7 and 8 are 15
8 and 8 are 16	8 and 8 are 16
8 and 9 are 17	9 and 8 are 17
8 and 10 are 18	10 and 8 are 18

1. Samuel gave 1 cent for a pencil, and 8 cents for a slate: how much did both cost? Why?

2. James has 8 raisins in his pocket, and 2 in his hand: how many raisins has he? Why?

3. Mary has 3 pins in one hand, and 8 in the other: how many pins has she in both? Why?

4. There are 8 geese in one pond, and 4 in another: how many geese in both? Why?

5. Thomas has 5 marbles, and finds 8 more: how many marbles has he then? Why?

6. Harvey had 8 eggs, and Thomas 6: how many eggs had both? Why?

7. I gave 7 dollars for a vest, and 8 dollars for a coat: how much did both cost? Why?

8. I bought 8 yards of blue cloth, and 8 yards of black: how many yards did I buy? Why?

9. Anna is 9 years old, and Alice is 8 years older than Anna: how old is Alice? Why?

10. If a yard of muslin cost 8 cents, and a yard of calico 10 cents, what will both cost? Why?

LESSON X.

9 and 1 are 10

9 and 2 are 11

9 and 3 are 12

9 and 4 are 13

9 and 5 are 14

9 and 6 are 15

9 and 7 are 16

9 and 8 are 17

9 and 9 are 18

9 and 10 are 19

1 and 9 are 10

2 and 9 are 11

3 and 9 are 12

4 and 9 are 13

5 and 9 are 14

6 and 9 are 15

7 and 9 are 16

8 and 9 are 17

9 and 9 are 18

10 and 9 are 19

1. Sarah had 1 cherry, and her sister gave her 9 more: how many had she then? Why?

2. A cat caught 9 mice one day, and 2 the next: how many did she catch in all? Why?

3. Mary gave 3 cents for paper, and 9 cents for a book: how much did both cost? Why?

4. Joseph caught 9 fish in one pool, and 4 in another: how many did he catch? Why?

5. If 5 horses are in one field, and 9 in another, how many horses are in both fields? Why?

6. If you have 9 oranges, and buy 6 more, how many oranges will you then have? Why?

7. Charles had 7 plums, and John gave him 9: how many did he then have? Why?

8. Sarah had 9 prunes, and her aunt gave her 8 more: how many had she then? Why?

9. George and Henry each have 9 cents: how many cents have both together? Why?

10. If an ounce of prunes cost 10 cents, and an orange 9 cents, how much do both cost? Why?

LESSON XI.

10 and 1 are 11	1 and 10 are 11
10 and 2 are 12	2 and 10 are 12
10 and 3 are 13	3 and 10 are 13
10 and 4 are 14	4 and 10 are 14
10 and 5 are 15	5 and 10 are 15
10 and 6 are 16	6 and 10 are 16
10 and 7 are 17	7 and 10 are 17
10 and 8 are 18	8 and 10 are 18
10 and 9 are 19	9 and 10 are 19
10 and 10 are 20	10 and 10 are 20

1. My gloves cost 1 dollar, and my coat 10 dollars: how much did both cost? Why?

2. I paid 10 cents for ink, and 2 cents for paper: how much did I pay for both? Why?

3. Gave 3 dollars for a dress, and 10 dollars for a shawl: how much for both? Why?

4. There are 10 trees in one row, and 4 in another: how many trees in all? Why?

5. In one pasture there are 5 cows, and in another 10: how many cows in both? Why?

6. Bought 10 yards of blue ribbon, and 6 yards of white: how many yards did I buy? Why?

7. There are 7 girls in one class, and 10 in another: how many girls in both? Why?

8. I received 10 dollars for peaches, and 8 dollars for plums: how much in all? Why?

9. Edwin lost 9 cents, and had 10 cents left: how many had he at first? Why?

10. Mary had 10 cents, and her mother gave her 10 more: how many did she then have? Why?

LESSON XII.

REVIEW OF THE PRECEDING.

- | | |
|----------------------------|------------|
| 1. How many are 2 and 4? | 3 and 6? |
| 2. How many are 3 and 5? | 4 and 7? |
| 3. How many are 6 and 4? | 3 and 8? |
| 4. How many are 2 and 9? | 8 and 2? |
| 5. How many are 2 and 10? | 7 and 2? |
| 6. How many are 3 and 3? | 4 and 4? |
| 7. How many are 5 and 4? | 6 and 5? |
| 8. How many are 2 and 7? | 3 and 10? |
| 9. How many are 8 and 3? | 3 and 9? |
| 10. How many are 5 and 6? | 7 and 5? |
| <hr/> | |
| 11. How many are 6 and 7? | 9 and 7? |
| 12. How many are 10 and 6? | 6 and 6? |
| 13. How many are 7 and 7? | 10 and 7? |
| 14. How many are 8 and 6? | 6 and 9? |
| 15. How many are 7 and 6? | 9 and 4? |
| 16. How many are 4 and 6? | 9 and 10? |
| 17. How many are 10 and 8? | 5 and 8? |
| 18. How many are 7 and 8? | 7 and 10? |
| 19. How many are 6 and 8? | 7 and 3? |
| 20. How many are 6 and 3? | 8 and 8? |
| <hr/> | |
| 21. How many are 9 and 9? | 9 and 3? |
| 22. How many are 10 and 9? | 8 and 10? |
| 23. How many are 4 and 9? | 4 and 5? |
| 24. How many are 10 and 3? | 5 and 10? |
| 25. How many are 6 and 10? | 10 and 5? |
| 26. How many are 5 and 7? | 4 and 8? |
| 27. How many are 8 and 9? | 9 and 6? |
| 28. How many are 9 and 2? | 8 and 7? |
| 29. How many are 9 and 8? | 7 and 9? |
| 30. How many are 9 and 5? | 10 and 10? |

LESSON XIII.

1. There are 6 trees in one row, and 5 trees in another: how many trees in both?

2. Thomas paid 4 cents for a top, and 7 cents for an orange: how much did he pay for both?

3. George had 8 peaches, and his mother gave him 5 more: how many did he then have?

4. If you spend 5 cents for a pencil, and 8 cents for a book, how much will you spend?

5. A boy bought 8 pounds of beef, and 6 pounds of pork: how much meat did he buy?

6. Jane paid 5 cents for thread, and 7 cents for tape: how many cents did she pay?

7. Mother gave me 5 cents, and father 6 cents: how many cents did I get?

8. Louis had 8 dimes, and his cousin gave him 7 more: how many dimes had he then?

9. Susan is 9 years old, and Emma is 10 years older than Susan: how old is Emma?

10. There are 5 apples on one limb, and 9 on another: how many apples on both?

11. A boy had a number of cents: after spending 10, he had 6 left: how many had he at first?

12. Laura is 6 years old, and Kate is 9 years older than Laura: how old is Kate?

13. Bought three barrels of apples for 9 dollars, and a barrel of flour for 7 dollars: how much did both cost?

14. George had 9 peaches, John 7, and Harry none: if both boys give their peaches to Harry, how many will he have?

15. If two spools of thread cost 8 cents, and two yards of tape 6 cents, how many cents will both cost?

LESSON XIV.

1. How many are 1 and 2 and 3? 3 and 1 and 2? 2 and 3 and 1? 3 and 2 and 1?

2. How many are 2 and 3 and 4? 4 and 2 and 3? 4 and 3 and 2? 1 and 2 and 3 and 4? 1 and 3 and 4 and 2? 1 and 2 and 4 and 3?

3. Mary paid 6 cents for ribbon, 4 cents for thread, and 8 cents for needles: how much did she pay for all?

4. Joseph caught 5 fish, Samuel 3, and Henry 4: how many did all catch?

5. A boy spent 3 cents for candies, 6 cents for cakes, and had 2 cents remaining: how much had he at first?

6. Jane is 5 years old, Sarah 2, and Laura 4: how many years in all their ages?

7. If 6 sheets of paper cost 10 cents, and 3 pencils cost 5 cents, how much do all cost?

8. Five dollars, and 4 dollars, and 6 dollars, are how many dollars?

9. Seven peaches, and 2 peaches, and 9 peaches, are how many peaches?

10. Eight days, and 2 days, and 10 days, are how many days?

11. Frank spent 3 cents for peaches, 5 cents for oranges, and 10 cents for lemons: how many cents did he spend?

12. James has 4 plums, Thomas has 3, and Edward has 9: if all the plums are given to Thomas, how many will he then have?

13. My hat cost 3 dollars, my vest 7 dollars, and my coat 9 dollars: how much did all cost?

14. I owe to one man 4 dollars, to another 5 dollars, and to another 9 dollars: how much do I owe to all?

SUBTRACTION.—LESSON I.

TO TEACHERS.—The counters on the right, represent the numbers to be subtracted; those on the left, what remain after performing the subtraction.

1. James had 1 apple, and he gave it to his brother: how many had he left?

One from 1 leaves how many? ○

2. Mary had 2 peaches: after giving her sister 1, how many had she left?

One from 2 leaves how many? Ans. 1.

Why? *Because 1 and 1 are 2.*

3. Daniel had 3 canary birds, and 1 of them flew away: how many had he left?

One from 3 leaves how many? Why? ○ ○ ○

4. Lucy had 4 oranges: after eating 1, how many had she left?

One from 4 leaves how many? Why? ○ ○ ○ ○

5. Thomas had 5 pet rabbits, but 1 of them died: how many were left?

One from 5 leaves how many? Why? ○ ○ ○ ○ ○

6. If you take 1 raisin from 6 raisins, how many raisins are left?

One from 6 leaves how many? Why? ○ ○ ○ ○ ○ ○

7. If you take 1 cent from 7 cents, how many cents are left?

One from 7 leaves how many? Why? ○ ○ ○ ○ ○ ○ ○

LESSON II.

0 from 1 leaves 1	1 from 1 leaves 0
1 from 2 leaves 1	1 from 2 leaves 1
2 from 3 leaves 1	1 from 3 leaves 2
3 from 4 leaves 1	1 from 4 leaves 3
4 from 5 leaves 1	1 from 5 leaves 4
5 from 6 leaves 1	1 from 6 leaves 5
6 from 7 leaves 1	1 from 7 leaves 6
7 from 8 leaves 1	1 from 8 leaves 7
8 from 9 leaves 1	1 from 9 leaves 8
9 from 10 leaves 1	1 from 10 leaves 9

1. Edwin had 2 cents, and spent 1 cent. how many had he left? Why?

2. Mary had 3 roses, and she gave 2 of them to Henry: how many had she left? Why?

3. If 1 melon be taken from 4 melons, how many will remain? Why?

4. If you have 5 cents, and spend 4 of them, how many will you then have? Why?

5. Thomas had 6 pigeons, but 1 of them died: how many had he then? Why?

6. Charles had 7 marbles, and lost 6 of them: how many had he left? Why?

7. Alice had 8 chickens, and 1 was killed: how many had she then? Why?

8. Jane had 9 cents, and spent 8 cents: how many cents had she left? Why?

9. If you take 9 apples from 10 apples, how many apples will remain? Why?

10. Ella had 10 plums, and she gave 1 to her sister: how many had she left? Why?

LESSON III.

0 from 2 leaves 2	2 from 2 leaves 0
1 from 3 leaves 2	2 from 3 leaves 1
2 from 4 leaves 2	2 from 4 leaves 2
3 from 5 leaves 2	2 from 5 leaves 3
4 from 6 leaves 2	2 from 6 leaves 4
5 from 7 leaves 2	2 from 7 leaves 5
6 from 8 leaves 2	2 from 8 leaves 6
7 from 9 leaves 2	2 from 9 leaves 7
8 from 10 leaves 2	2 from 10 leaves 8
9 from 11 leaves 2	2 from 11 leaves 9

1. Mary had 2 peaches, and she ate them both : how many had she left? Why?

2. Frank had 3 apples, and he gave 2 of them to his brother : how many had he left? Why?

3. William had 4 cents : after spending 2 for nuts, how many had he left? Why?

4. There were 5 birds in a tree : after 2 of them flew away, how many were left? Why?

5. Daniel caught 6 mice, but 2 of them escaped : how many were left? Why?

6. Francis bought 7 oranges, and eat 2 of them : how many had he then? Why?

7. John had 8 marbles, but he lost 2 of them : how many had he then? Why?

8. A hen had 9 chickens, but 2 of them ran away : how many were left? Why?

9. Margaret had 10 cakes, and gave 8 of them to her sister : how many had she left? Why?

10. If 2 yards be taken from 11 yards, how many yards will remain? Why?

LESSON IV.

0 from 3 leaves 3	3 from 3 leaves 0
1 from 4 leaves 3	3 from 4 leaves 1
2 from 5 leaves 3	3 from 5 leaves 2
3 from 6 leaves 3	3 from 6 leaves 3
4 from 7 leaves 3	3 from 7 leaves 4
5 from 8 leaves 3	3 from 8 leaves 5
6 from 9 leaves 3	3 from 9 leaves 6
7 from 10 leaves 3	3 from 10 leaves 7
8 from 11 leaves 3	3 from 11 leaves 8
9 from 12 leaves 3	3 from 12 leaves 9

1. Daniel has 3 cents in his purse: if he takes 3 out, how many will be left? Why?

2. Mary had 4 oranges: after eating 3, how many did she have left? Why?

3. Lucy had 5 chickens, but 2 of them died: how many had she then? Why?

4. Six persons are in a stage: if 3 of them get out, how many will remain in? Why?

5. Cora had 7 pins, and lost 4 of them: how many pins did she then have? Why?

6. Francis had 8 cents, and spent 3 of them: how many cents had he then? Why?

7. A hen had 9 chickens, but a hawk carried off 6 of them: how many were left? Why?

8. John had 10 lemons, and gave 3 to a poor sick boy: how many had he left? Why?

9. If 8 be taken from 11, how many will remain? Why?

10. Eliza had 12 cents, and spent 3 cents: how many cents had she left? Why?

LESSON V.

0 from 4 leaves 4	4 from 4 leaves 0
1 from 5 leaves 4	4 from 5 leaves 1
2 from 6 leaves 4	4 from 6 leaves 2
3 from 7 leaves 4	4 from 7 leaves 3
4 from 8 leaves 4	4 from 8 leaves 4
5 from 9 leaves 4	4 from 9 leaves 5
6 from 10 leaves 4	4 from 10 leaves 6
7 from 11 leaves 4	4 from 11 leaves 7
8 from 12 leaves 4	4 from 12 leaves 8
9 from 13 leaves 4	4 from 13 leaves 9

1. Mary has a cup containing 4 cents: if she take out 4, how many will be left? Why?

2. Henry has 5 apples: if he eat 4 of them, how many will he have left? Why?

3. Eliza had 6 birds in a cage: she let 2 of them out: how many had she then? Why?

4. Seven ducks were in a pond: a man shot 4 of them: how many were then left? Why?

5. There are 8 beans in a row: if you take 4 of them away, how many will remain? Why?

6. A window contained 9 panes of glass: a boy broke 5: how many were not broken? Why?

7. Ten trees were standing in a field: a storm blew down 4: how many remained? Why?

8. Oliver is 4 years old, and Jane is 11: how much older is Jane than Oliver? Why?

9. If 8 oranges be taken from 12 oranges, how many oranges will remain? Why?

10. A hen had 13 chickens, and 4 of them died: how many were left? Why?

LESSON VI.

0 from 5 leaves 5	5 from 5 leaves 0
1 from 6 leaves 5	5 from 6 leaves 1
2 from 7 leaves 5	5 from 7 leaves 2
3 from 8 leaves 5	5 from 8 leaves 3
4 from 9 leaves 5	5 from 9 leaves 4
5 from 10 leaves 5	5 from 10 leaves 5
6 from 11 leaves 5	5 from 11 leaves 6
7 from 12 leaves 5	5 from 12 leaves 7
8 from 13 leaves 5	5 from 13 leaves 8
9 from 14 leaves 5	5 from 14 leaves 9

1. Mary had 5 canary birds, but she let 5 of them escape: how many were then left? Why?

2. Francis had 6 cents, and paid 5 for an orange: how many cents had he left? Why?

3. There are 7 crows in the field: if you scare 2 of them away, how many will be left? Why?

4. Eight ships went to sea, and 5 of them were lost in a storm: how many remained? Why?

5. Lucy had 9 yards of ribbon, and gave 5 for a doll: how many yards had she left? Why?

6. Daniel, having 10 cents, paid 5 cents for a pencil: how much had he left? Why?

7. Father gave me 6 cents, and mother enough to make 11: how many did mother give? Why?

8. I want 12 cents, and have but 5: how many more must I get? Why?

9. I owed 13 dollars, and paid all but 8 dollars: how much did I pay? Why?

10. George had 14 cents, and spent 9: how many cents had he left? Why?

LESSON VII.

0 from 6 leaves 6	6 from 6 leaves 0
1 from 7 leaves 6	6 from 7 leaves 1
2 from 8 leaves 6	6 from 8 leaves 2
3 from 9 leaves 6	6 from 9 leaves 3
4 from 10 leaves 6	6 from 10 leaves 4
5 from 11 leaves 6	6 from 11 leaves 5
6 from 12 leaves 6	6 from 12 leaves 6
7 from 13 leaves 6	6 from 13 leaves 7
8 from 14 leaves 6	6 from 14 leaves 8
9 from 15 leaves 6	6 from 15 leaves 9

1. If Daniel has 6 apples, and gives 6 of them to Francis, how many will he have left? Why?

2. If James makes 7 marks on a slate, and then erases 6 of them, how many will remain? Why?

3. Mary had 8 cents, and spent 2 cents for a thimble: how many had she left? Why?

4. Henry had 9 raisins: after eating 6 of them, how many had he left? Why?

5. I bought 10 eggs in market, and broke 4 coming home: how many had I then? Why?

6. If 6 cents be taken from 11 cents, how many cents will remain? Why?

7. I paid 6 dollars for a coat, and sold it for 12 dollars: how much did I gain? Why?

8. I had 13 dozen of eggs, and sold 6 dozen: how many dozen were left? Why?

9. John had 14 oranges, and gave away 8: how many had he then? Why?

10. Nine and how many make 15? Six and how many make 14? Why?

LESSON VIII.

0 from 7 leaves 7	7 from 7 leaves 0
1 from 8 leaves 7	7 from 8 leaves 1
2 from 9 leaves 7	7 from 9 leaves 2
3 from 10 leaves 7	7 from 10 leaves 3
4 from 11 leaves 7	7 from 11 leaves 4
5 from 12 leaves 7	7 from 12 leaves 5
6 from 13 leaves 7	7 from 13 leaves 6
7 from 14 leaves 7	7 from 14 leaves 7
8 from 15 leaves 7	7 from 15 leaves 8
9 from 16 leaves 7	7 from 16 leaves 9

1. If you take 7 apples from a basket containing only 7, how many will be left? Why?

2. Charles had 8 cents, and spent 7 of them for candy: how many cents had he left? Why?

3. A man bought a cow for 9 dollars, and paid 2: how much remains unpaid? Why?

4. Ella bought 10 oranges, and gave her mother 7: how many had she left? Why?

5. A book, which cost 7 cents, was sold for 11 cents: how much was gained? Why?

6. Thomas had 12 marbles, and lost 5 of them: how many had he left? Why?

7. If 7 oranges be taken from 13 oranges, how many oranges will remain? Why?

8. Mary is 14 years old, and Anna is 7: how much older is Mary than Anna? Why?

9. A boy had 15 cents; after spending part, he had 8 cents left: how much did he spend? Why?

10. Seven and how many make 15? Nine and how many make 16? Why?

LESSON IX.

0 from 8 leaves 8	8 from 8 leaves 0
1 from 9 leaves 8	8 from 9 leaves 1
2 from 10 leaves 8	8 from 10 leaves 2
3 from 11 leaves 8	8 from 11 leaves 3
4 from 12 leaves 8	8 from 12 leaves 4
5 from 13 leaves 8	8 from 13 leaves 5
6 from 14 leaves 8	8 from 14 leaves 6
7 from 15 leaves 8	8 from 15 leaves 7
8 from 16 leaves 8	8 from 16 leaves 8
9 from 17 leaves 8	8 from 17 leaves 9

1. A room contains 8 chairs: if you take out 8 chairs, how many will remain? Why?

2. Mary had 9 pecans: after eating 8 of them, how many will she have left? Why?

3. Jane has 10 cents: if she give 8 for a book, how many will she have? Why?

4. Susan bought 11 peaches, and gave Emma 8: how many had she left? Why?

5. I sold a ball for 12 cents, which cost me 8 cents: how much did I gain? Why?

6. Frank had 13 oranges, and he gave 5 to Charles: how many did Frank then have? Why?

7. Samuel, having 14 cents, paid 8 cents for a slate: how many cents had he left? Why?

8. Henry bought 15 pens, and lost 7: how many pens had he remaining? Why?

9. If 16 persons are in a room, and 8 of them leave, how many remain? Why?

10. Nine and how many make 17? Eight and how many make 15? Why?

LESSON X.

0 from 9 leaves 9	9 from 9 leaves 0
1 from 10 leaves 9	9 from 10 leaves 1
2 from 11 leaves 9	9 from 11 leaves 2
3 from 12 leaves 9	9 from 12 leaves 3
4 from 13 leaves 9	9 from 13 leaves 4
5 from 14 leaves 9	9 from 14 leaves 5
6 from 15 leaves 9	9 from 15 leaves 6
7 from 16 leaves 9	9 from 16 leaves 7
8 from 17 leaves 9	9 from 17 leaves 8
9 from 18 leaves 9	9 from 18 leaves 9

1. Francis has 9 cents in his pocket: if he take out 9, how many will be left? Why?

2. Thomas has 10 walnuts: after cracking 9, how many will he have left? Why?

3. I had 11 cents, and spent 9 for a slate: how much had I remaining? Why?

4. Having 12 dollars, I spent 9 for a coat: how much had I then? Why?

5. Anna had 13 birds, and 4 of them died: how many had she left? Why?

6. There were 14 horses in a field, but 9 of them got out: how many remained? Why?

7. Mary had 15 plums, and she gave her brother 6: how many had she then? Why?

8. George had 16 cents, and he spent 9: how many did he then have? Why?

9. A man had 17 horses, and sold 8 of them: how many had he then? Why?

10. I bought a kite for 9 cents, and sold it for 18 cents: how much did I make? Why?

LESSON XI.

0 from 10 leaves 10	10 from 10 leaves 0
1 from 11 leaves 10	10 from 11 leaves 1
2 from 12 leaves 10	10 from 12 leaves 2
3 from 13 leaves 10	10 from 13 leaves 3
4 from 14 leaves 10	10 from 14 leaves 4
5 from 15 leaves 10	10 from 15 leaves 5
6 from 16 leaves 10	10 from 16 leaves 6
7 from 17 leaves 10	10 from 17 leaves 7
8 from 18 leaves 10	10 from 18 leaves 8
9 from 19 leaves 10	10 from 19 leaves 9

1. If you take 10 figs from a basket containing only 10, how many will be left? Why?

2. Lucy had 11 cents, and paid 10 for a book: how many had she left? Why?

3. I had 12 dollars: after spending part, I had 10 dollars left: how much was spent? Why?

4. Thirteen pupils are in school: if 3 of them leave, how many will remain? Why?

5. Fourteen trees were standing in a field: 10 of them were cut down: how many remained? Why?

6. Charles had 15 marbles, and lost all but 5: how many did he lose? Why?

7. Henry had 16 cents, and spent 10: how many did he then have? Why?

8. I borrowed 17 dollars, and paid all but 7: how many did I pay? Why?

9. Bought 2 oranges for 10 cents, and sold them for 18 cents: how much did I gain? Why?

10. Ten and 9 are how many? Nine from 19 leaves how many? Why?

LESSON XII.

REVIEW OF THE PRECEDING.

- | | | | |
|--------------------------|-----|---------|-----|
| 1. How many are 4 less | 2? | 7 less | 3? |
| 2. How many are 9 less | 6? | 10 less | 9? |
| 3. How many are 10 less | 4? | 6 less | 3? |
| 4. How many are 7 less | 5? | 9 less | 3? |
| 5. How many are 11 less | 4? | 12 less | 4? |
| 6. How many are 12 less | 8? | 13 less | 6? |
| 7. How many are 18 less | 10? | 19 less | 9? |
| 8. How many are 15 less | 9? | 16 less | 10? |
| 9. How many are 13 less | 3? | 14 less | 7? |
| 10. How many are 11 less | 8? | 7 less | 4? |
| <hr/> | | | |
| 11. How many are 11 less | 6? | 12 less | 3? |
| 12. How many are 16 less | 7? | 15 less | 10? |
| 13. How many are 17 less | 8? | 17 less | 10? |
| 14. How many are 11 less | 9? | 9 less | 5? |
| 15. How many are 8 less | 3? | 7 less | 2? |
| 16. How many are 8 less | 6? | 10 less | 7? |
| 17. How many are 11 less | 5? | 12 less | 9? |
| 18. How many are 13 less | 10? | 12 less | 10? |
| 19. How many are 14 less | 9? | 13 less | 7? |
| 20. How many are 15 less | 8? | 17 less | 9? |
| <hr/> | | | |
| 21. How many are 13 less | 4? | 16 less | 8? |
| 22. How many are 11 less | 6? | 18 less | 9? |
| 23. How many are 15 less | 7? | 16 less | 9? |
| 24. How many are 13 less | 5? | 12 less | 6? |
| 25. How many are 12 less | 10? | 14 less | 8? |
| 26. How many are 9 less | 4? | 15 less | 6? |
| 27. How many are 12 less | 5? | 8 less | 5? |
| 28. How many are 11 less | 10? | 15 less | 9? |
| 29. How many are 12 less | 7? | 9 less | 8? |
| 30. How many are 19 less | 10? | 17 less | 7? |

LESSON. XIII.

ADDITION AND SUBTRACTION.

1. One and 3, less 4, make how many?
 2. One and 5, less 5, make how many?
 3. One and 7, less 6, make how many?
 4. One and 8, less 7, make how many?
 5. One and 9, less 8, make how many?
 6. Two and 3, less 2, make how many?
 7. Two and 4, less 3, make how many?
 8. Two and 5, less 4, make how many?
 9. Two and 7, less 5, make how many?
 10. Two and 8, less 6, make how many?
-
11. Two and 5, less 7, make how many?
 12. Two and 9, less 8, make how many?
 13. Two and 10, less 9, make how many?
 14. Three and 3, less 2, make how many?
 15. Three and 4, less 3, make how many?
 16. Three and 5, less 4, make how many?
 17. Three and 6, less 5, make how many?
 18. Three and 7, less 6, make how many?
 19. Three and 8, less 7, make how many?
 20. Three and 9, less 8, make how many?
-
21. Four and 1, less 5, make how many?
 22. Four and 3, less 6, make how many?
 23. Four and 6, less 7, make how many?
 24. Four and 9, less 8, make how many?
 25. Four and 10, less 9, make how many?
 26. Five and 5, less 4, make how many?
 27. Five and 7, less 5, make how many?
 28. Five and 9, less 6, make how many?
 29. Six and 6, less 4, make how many?
 30. Six and 9, less 8, make how many?

LESSON XIV.

PROMISCUOUS QUESTIONS.

1. John spent 3 cents for a top, and 5 cents for a kite: how many cents did he spend?
2. Edwin lost 4 cents, and had 8 cents left: how much had he at first?
3. Daniel's father promised him 6 cents: he has given him 4: how many must he yet give him?
4. James is now 6 years old: in how many years will he be 9 years old?
5. Francis has 10 cents in two pockets: there are 4 cents in one: how many in the other?
6. I think of two numbers that together make 8: one of them is 5: what is the other?
7. Two numbers added together make 11: one of them is 7: what is the other?
8. Three numbers together make 10: the first is 5, the second is 3: what is the third?
9. Frank had 8 cents: after spending 5, his mother gave him 4: how many had he then?
10. Mary had 11 apples: she gave 4 to Lucy, and 5 to Nancy: how many had she left?
11. If John was 5 years older, he would then be 12: how old is he now?
12. Francis had 12 cents: he bought an orange for 5 cents, and a lemon for 3 cents: how many cents had he left?
13. Emma paid 5 cents for thread, 2 cents for tape, and 3 cents for needles: she had 15 cents: how much had she left?
14. I have 10 cents in one hand, and 6 in the other: if I take 2 cents from each hand, how many cents will I then have in both?
15. How many are 4 and 9, less 6? Why?

MULTIPLICATION.—LESSON I.

1. What cost 2 pencils, at 1 cent each?

○ ○
How many are 1 and 1?

2. What cost 2 figs, at 2 cents each?

○○ ○○
How many are 2 and 2?

3. What cost 2 plums, at 3 cents each?

○○○ ○○○
How many are 3 and 3?

4. What cost 2 pears, at 4 cents each?

○○○○ ○○○○
How many are 4 and 4?

5. What cost 2 peaches, at 5 cents each?

○○○○○ ○○○○○
How many are 5 and 5?

6. What cost 2 balls, at 6 cents each?

○○○○○○ ○○○○○○
How many are 6 and 6?

7. What cost 2 oranges, at 7 cents each?

○○○○○○○ ○○○○○○○○
How many are 7 and 7?

8. What cost 2 slates, at 8 cents each?

○○○○○○○○ ○○○○○○○○
How many are 8 and 8?

9. What cost 2 books, at 9 cents each?

○○○○○○○○○ ○○○○○○○○○○
How many are 9 and 9?

10. What cost 2 knives, at 10 cents each?

LESSON II.

Once 1 is 1	Once 1 is 1
2 times 1 are 2	Once 2 is 2
3 times 1 are 3	Once 3 is 3
4 times 1 are 4	Once 4 is 4
5 times 1 are 5	Once 5 is 5
6 times 1 are 6	Once 6 is 6
7 times 1 are 7	Once 7 is 7
8 times 1 are 8	Once 8 is 8
9 times 1 are 9	Once 9 is 9
10 times 1 are 10	Once 10 is 10

1. When apples were selling at 1 cent each, James bought 1: how many cents did it cost?
Ans. 1 cent. Why? *Because once 1 is 1.*

2. I bought 2 figs at 1 cent each: how much did they cost? Why? *Because twice 1 are 2.*

3. I paid 1 cent for a fig: at that rate, how much will 3 figs cost? Why?

4. At 1 cent each, what will be the cost of 4 pears? Why?

5. If 1 yard of tape cost 1 cent, what will be the cost of 5 yards? Why?

6. What will be the cost of 6 yards of silk, if 1 yard cost 1 dollar? Why?

7. If a car travel 1 mile in a minute, how far will it travel in 7 minutes? Why?

8. If 1 toy book cost 1 cent, how much must Mary pay for 8 toy books? Why?

9. How much will 9 pencils cost, at 1 cent each? Why?

10. What cost 10 eggs, at 1 cent each? Why?

LESSON III.

Once 2 is 2	2 times 1 are 2
2 times 2 are 4	2 times 2 are 4
3 times 2 are 6	2 times 3 are 6
4 times 2 are 8	2 times 4 are 8
5 times 2 are 10	2 times 5 are 10
6 times 2 are 12	2 times 6 are 12
7 times 2 are 14	2 times 7 are 14
8 times 2 are 16	2 times 8 are 16
9 times 2 are 18	2 times 9 are 18
10 times 2 are 20	2 times 10 are 20

1. When peaches are selling at 2 cents each, how many cents will 2 cost? *Ans. 4 cents. Why?*

Because 2 peaches will cost 2 times as much as 1 peach: if 1 peach cost 2 cents, 2 peaches will cost 2 times 2 cents, which are 4 cents.

2. Frank bought 2 plums, at 3 cents each: how much did they cost? *Why?*

3. How much must you pay for 4 yards of tape, at 2 cents a yard? *Why?*

4. How much will 2 pounds of meat cost, at 5 cents a pound? *Why?*

5. When lemons are selling at 6 cents each, how many cents will 2 lemons cost? *Why?*

6. Sarah bought 2 yards of ribbon, at 7 cents a yard: how many cents did they cost? *Why?*

7. William bought 8 sticks of candy, at 2 cents a stick: how many cents did they cost? *Why?*

8. Harry has 9 cents, and Emma 2 times as many: how many has Emma? *Why?*

9. What cost 2 books, at 10 cents each? *Why?*

LESSON IV.

Once 3 is 3	3 times 1 are 3
2 times 3 are 6	3 times 2 are 6
3 times 3 are 9	3 times 3 are 9
4 times 3 are 12	3 times 4 are 12
5 times 3 are 15	3 times 5 are 15
6 times 3 are 18	3 times 6 are 18
7 times 3 are 21	3 times 7 are 21
8 times 3 are 24	3 times 8 are 24
9 times 3 are 27	3 times 9 are 27
10 times 3 are 30	3 times 10 are 30

1. When lemons are selling at 3 cents each, how much will 1 cost? Why?

2. If a pint of chestnuts cost 3 cents, how much will 2 pints cost? Why?

3. James bought 3 tops, at 3 cents each: how many cents did they cost? Why?

4. If Thomas can walk 3 miles in an hour, how far can he walk in 4 hours? Why?

5. If 1 pear is worth 5 apples, how many apples are 3 pears worth? Why?

6. If 1 peach is worth 3 plums, how many plums are 6 peaches worth? Why?

7. How much will 7 yards of tape cost, if 1 yard cost 3 cents? Why?

8. If 1 orange cost 3 cents, how many cents will 8 oranges cost? Why?

9. If 1 pound of sugar cost 9 cents, how much will 3 pounds cost? Why?

10. A slate cost 10 cents, and a book 3 times as much: how much did the book cost? Why?

LESSON V.

Once 4 is 4	4 times 1 are 4
2 times 4 are 8	4 times 2 are 8
3 times 4 are 12	4 times 3 are 12
4 times 4 are 16	4 times 4 are 16
5 times 4 are 20	4 times 5 are 20
6 times 4 are 24	4 times 6 are 24
7 times 4 are 28	4 times 7 are 28
8 times 4 are 32	4 times 8 are 32
9 times 4 are 36	4 times 9 are 36
10 times 4 are 40	4 times 10 are 40

1. When oranges sell at 4 cents each, how much will 1 cost? Why?

2. Lucy has 2 kittens, and each one has 4 feet: how many feet have both? Why?

3. Thomas has 3 dogs, and James has 4 times as many: how many has James? Why?

4. Daniel bought 4 tops, at 4 cents each: how much did they cost? Why?

5. When rice is 4 cents a pound, how much will 5 pounds cost? Why?

6. There are 4 quarters in one apple: how many quarters are there in 6 apples? Why?

7. Francis bought 7 oranges, at 4 cents each: how much did they cost? Why?

8. How much will 8 peaches cost, at 4 cents each? Why?

9. If a pound of starch cost 9 cents, what will 4 pounds cost? Why?

10. What will 4 lead pencils cost, at 10 cents each? Why?

LESSON VI.

Once 5 is 5	5 times 1 are 5
2 times 5 are 10	5 times 2 are 10
3 times 5 are 15	5 times 3 are 15
4 times 5 are 20	5 times 4 are 20
5 times 5 are 25	5 times 5 are 25
6 times 5 are 30	5 times 6 are 30
7 times 5 are 35	5 times 7 are 35
8 times 5 are 40	5 times 8 are 40
9 times 5 are 45	5 times 9 are 45
10 times 5 are 50	5 times 10 are 50

1. When oranges are selling at 5 cents each, how much will 1 orange cost? Why?
2. Francis bought 5 tops, at 2 cents each: how many cents did they cost? Why?
3. If James can walk 5 miles in 1 hour, how many miles can he walk in 3 hours? Why?
4. If 1 peach is worth 5 plums, how many plums are 4 peaches worth? Why?
5. Lucy has 5 hens, and each hen has 5 chickens: how many chickens do all have? Why?
6. Francis found 6 hen's nests, with 5 eggs in each: how many eggs in all? Why?
7. Daniel bought 5 oranges, at 7 cents each: how much did he pay for them? Why?
8. What will be the cost of 8 chickens, at 5 cents a-piece? Why?
9. If 1 pound of flour cost 5 cents, what will 9 pounds cost? Why?
10. At 10 cents a yard, what will 5 yards of muslin cost? Why?

LESSON VII.

Once 6 is 6	6 times 1 are 6
2 times 6 are 12	6 times 2 are 12
3 times 6 are 18	6 times 3 are 18
4 times 6 are 24	6 times 4 are 24
5 times 6 are 30	6 times 5 are 30
6 times 6 are 36	6 times 6 are 36
7 times 6 are 42	6 times 7 are 42
8 times 6 are 48	6 times 8 are 48
9 times 6 are 54	6 times 9 are 54
10 times 6 are 60	6 times 10 are 60

1. When citrons are selling at 6 cents each, how much will 1 cost? Why?

2. If 6 yards of calico make 1 dress, how many yards will make 2 dresses? Why?

3. Mary has 3 hens, and each hen has 6 chickens: how many chickens do all have? Why?

4. If there are 6 panes of glass in one window, how many panes are in 4 windows? Why?

5. If 1 orange is worth 5 peaches, how many peaches are 6 oranges worth? Why?

6. What will 6 quarts of plums cost, at 6 cents a quart? Why?

7. If 1 quart of strawberries cost 7 cents, how much will 6 quarts cost? Why?

8. If a man eat 6 ounces of bread in 1 day, how many ounces will he eat in 8 days? Why?

9. What will be the cost of 6 lead pencils, at 9 cents each? Why?

10. I bought 6 dozen of eggs, at 10 cents a dozen: how much did they cost? Why?

LESSON VIII.

Once 7 is 7	7 times 1 are 7
2 times 7 are 14	7 times 2 are 14
3 times 7 are 21	7 times 3 are 21
4 times 7 are 28	7 times 4 are 28
5 times 7 are 35	7 times 5 are 35
6 times 7 are 42	7 times 6 are 42
7 times 7 are 49	7 times 7 are 49
8 times 7 are 56	7 times 8 are 56
9 times 7 are 63	7 times 9 are 63
10 times 7 are 70	7 times 10 are 70

1. When melons are selling at 7 cents each, how much will 1 cost? Why?

2. Sarah bought 2 thimbles at 7 cents each: how many cents did they cost? Why?

3. Edward has 3 pockets, and 7 marbles in each: how many marbles has he? Why?

4. There are 7 days in one week: how many days are there in 4 weeks? Why?

5. If 1 melon is worth 5 peaches, how many peaches are 7 melons worth? Why?

6. If a horse travel 7 miles in 1 hour, how many miles will he travel in 6 hours? Why?

7. At 7 cents each, how many cents will 7 melons cost? Why?

8. If Harry gives 7 marbles for 1 cent, how many must he give for 8 cents? Why?

9. If muslin is 9 cents a yard, how many cents will 7 yards cost? Why?

10. At 10 cents a yard, how much will 7 yards of ribbon cost? Why?

LESSON IX.

Once 8 is 8	8 times 1 are 8
2 times 8 are 16	8 times 2 are 16
3 times 8 are 24	8 times 3 are 24
4 times 8 are 32	8 times 4 are 32
5 times 8 are 40	8 times 5 are 40
6 times 8 are 48	8 times 6 are 48
7 times 8 are 56	8 times 7 are 56
8 times 8 are 64	8 times 8 are 64
9 times 8 are 72	8 times 9 are 72
10 times 8 are 80	8 times 10 are 80

1. When butter is selling at 8 cents a pound, how much will 1 pound cost? Why?

2. James bought 2 melons at 8 cents each: how many cents did they cost? Why?

3. Daniel caught 8 fish in 1 day: how many fish did he catch in 3 days? Why?

4. Nancy has 4 hens, and each hen has 8 chickens: how many chickens in all? Why?

5. There are 5 houses, each having 8 windows: how many windows in all? Why?

6. If there are 8 pints in one gallon, how many pints are there in 6 gallons? Why?

7. What will 8 lemons cost, if 1 lemon cost 7 cents? Why?

8. There are 8 quarts in 1 peck: how many quarts are there in 8 pecks? Why?

9. If 1 dozen apples cost 9 cents, how many cents will 8 dozen cost? Why?

10. How much will 8 combs cost, at 10 cents each? Why?

LESSON X.

Once 9 is 9	9 times 1 are 9
2 times 9 are 18	9 times 2 are 18
3 times 9 are 27	9 times 3 are 27
4 times 9 are 36	9 times 4 are 36
5 times 9 are 45	9 times 5 are 45
6 times 9 are 54	9 times 6 are 54
7 times 9 are 63	9 times 7 are 63
8 times 9 are 72	9 times 8 are 72
9 times 9 are 81	9 times 9 are 81
10 times 9 are 90	9 times 10 are 90

1. When melons are selling at 9 cents each, how much will 1 cost? 'Why?

2. Francis bought 2 knives, at 9 cents each: how many cents did they cost? Why?

3. I bought 3 pounds of raisins, at 9 cents a pound: how much did I pay for them? Why?

4. How much will 4 brushes cost, at 9 cents each? Why?

5. If 1 orange cost 5 cents, how much will 9 oranges cost? Why?

6. How many cents will 6 citrons cost, at 9 cents each? Why?

7. Frank bought 9 lemons, at 7 cents each: how much did they cost? Why?

8. If a boy travel 8 miles in 1 hour, how far will he travel in 9 hours? Why?

9. How many cents must be paid for 9 yards of muslin, at 9 cents a yard? Why?

10. If 1 orange is worth 10 plums, how many plums are 9 oranges worth? Why?

LESSON XI.

Once 10 is 10	-10 times 1 are 10
2 times 10 are 20	10 times 2 are 20
3 times 10 are 30	10 times 3 are 30
4 times 10 are 40	10 times 4 are 40
5 times 10 are 50	10 times 5 are 50
6 times 10 are 60	10 times 6 are 60
7 times 10 are 70	10 times 7 are 70
8 times 10 are 80	10 times 8 are 80
9 times 10 are 90	10 times 9 are 90
10 times 10 are 100	10 times 10 are 100

1. If pino apples sell at 10 cents each, how much will 1 cost? Why?
2. I bought 10 pens at 2 cents each: how much did they cost? Why?
3. If George earns 3 dollars in 1 week, how much will he earn in 10 weeks? Why?
4. There are 4 pecks in 1 bushel: how many pecks are there in 10 bushels? Why?
5. If a man eat 5 pounds of bread in 1 week, how much will he eat in 10 weeks? Why?
6. At 6 dollars a cord, how much will 10 cords of wood cost? Why?
7. If 10 marbles are given for 1 cent, how many must be given for 7 cents? Why?
8. How many cents will pay for 10 oranges, at 8 cents each? Why?
9. What will 9 barrels of flour cost, at 10 dollars a barrel? Why?
10. At 10 dollars a yard, how much will 10 yards of cloth cost? Why?

LESSON XII.

REVIEW OF THE PRECEDING.

- | | | | | |
|------------------|----------|-----|----------|-----|
| 1. How many are | 2 times | 5? | 3 times | 2? |
| 2. How many are | 3 times | 4? | 2 times | 7? |
| 3. How many are | 2 times | 9? | 4 times | 2? |
| 4. How many are | 3 times | 3? | 4 times | 5? |
| 5. How many are | 2 times | 10? | 3 times | 5? |
| 6. How many are | 2 times | 8? | 5 times | 2? |
| 7. How many are | 5 times | 4? | 2 times | 6? |
| 8. How many are | 2 times | 2? | 3 times | 7? |
| 9. How many are | 3 times | 10? | 4 times | 10? |
| 10. How many are | 5 times | 6? | 3 times | 8? |
| <hr/> | | | | |
| 11. How many are | 4 times | 3? | 7 times | 4? |
| 12. How many are | 8 times | 2? | 5 times | 5? |
| 13. How many are | 3 times | 6? | 4 times | 4? |
| 14. How many are | 4 times | 6? | 4 times | 9? |
| 15. How many are | 6 times | 4? | 3 times | 9? |
| 16. How many are | 4 times | 7? | 6 times | 3? |
| 17. How many are | 10 times | 2? | 7 times | 5? |
| 18. How many are | 5 times | 3? | 6 times | 2? |
| 19. How many are | 7 times | 2? | 9 times | 2? |
| 20. How many are | 10 times | 3? | 10 times | 5? |
| <hr/> | | | | |
| 21. How many are | 5 times | 7? | 6 times | 8? |
| 22. How many are | 10 times | 6? | 7 times | 9? |
| 23. How many are | 5 times | 8? | 6 times | 7? |
| 24. How many are | 10 times | 7? | 5 times | 10? |
| 25. How many are | 6 times | 9? | 5 times | 9? |
| 26. How many are | 8 times | 3? | 9 times | 3? |
| 27. How many are | 10 times | 8? | 7 times | 10? |
| 28. How many are | 9 times | 4? | 9 times | 10? |
| 29. How many are | 8 times | 10? | 7 times | 7? |
| 30. How many are | 9 times | 9? | 8 times | 8? |

LESSON XIII.

1. What will 8 pine apples cost, at 10 cents each?

2. How much must be paid for 3 lemons, at 6 cents each?

3. Harry bought 4 oranges, at 8 cents each: how much did they cost?

4. When eggs are 9 cents a dozen, how much must I pay for 8 dozen?

5. If a man can travel 10 miles in an hour, how far can he travel in 9 hours?

6. If 3 cents pay for 1 peach, how many cents will pay for 3 times as many peaches?

7. What will 3 combs cost, at 7 cents each? At 9 cents each?

8. If 1 yard of ribbon cost 8 cents, how many cents will 5 yards cost?

9. I bought 8 pounds of rice, at 8 cents a pound: what did it cost?

10. Frank is 4 times as old as Mary: Mary is 3 years old: how old is Frank?

11. How much will 5 pounds of beef cost, at 7 cents a pound?

12. If 1 turkey cost 7 dimes, how many dimes will 7 turkeys cost?

13. If a man can do a certain piece of work in 1 day, in what time can he do a piece of work 4 times as large?

14. In a school-room there are 9 desks, and 4 boys at each: how many boys are there in the room?

15. Henry has 7 marbles, and Charles has 9 times as many: how many marbles has Charles?

16. What cost 8 oranges, at 9 cents each?

LESSON XIV.

PROMISCUOUS QUESTIONS.

1. I had 14 cents, and bought 2 oranges, at 6 cents each: how much had I left?

2. I bought 2 apples at 1 cent each, and 3 lemons at 2 cents each: how much did all cost?

3. George had 15 marbles: he gave 4 to John, and 3 to Henry: how many had he left?

4. I paid 5 cents for apples, 3 cents for plums, and 8 cents for oranges: how much did I pay?

5. James bought 2 pups, at 3 dollars a-piece, and a dog for 4 dollars: how much did he pay for all?

6. John bought a sled for 10 cents: he sold it to Harry for 2 cents more than it cost: how many cents did he sell it for?

7. I bought a coat for 13 dollars, and sold it for 4 dollars less than cost: how much did I get for it?

8. Frank Miller owed me 17 cents for berries, and paid me 8 cents: how many cents did he then owe?

9. James had 17 marbles: he lost 9 of them, and afterward found 7 more: how many did he then have?

10. George owed me 19 cents: he gave me 2 oranges, worth 5 cents each, and the remainder in money: how much money did I get?

11. I bought 2 yards of cloth, at 4 dollars a yard, and 3 yards, at 2 dollars a yard: how much did I pay for both?

12. George has 15 marbles in his pocket: if he takes out 5, and afterward puts in 10 more, how many will then be in his pocket?

DIVISION.—LESSON I.

TO TEACHERS.—The whole number of counters following any question, represents the number to be divided; while each separate group, represents the division taken *one time*.

1. How many figs, at 1 cent each, can you buy for 2 cents?

○

○

How many times can you take 1 from 2?

2. How many pears, at 1 cent each, can be bought for 3 cents?

○

○

○

How many times can you take 1 from 3?

3. How many peaches, at 2 cents each, can be bought for 4 cents?

○

○

○

○

How many times can you take 2 from 4?

4. How many plums, at 2 cents each, can you buy for 8 cents?

○

○

○

○

○

○

○

○

How many times can you take 2 from 8?

5. How many tops, at 3 cents each, can you buy for 6 cents?

○

○

○

○

○

○

How many times can you take 3 from 6?

6. How many oranges, at 3 cents each, can be bought for 9 cents?

○

○

○

○

○

○

○

○

○

How many times can you take 3 from 9?

7. How many pencils, at 4 cents each, can be bought for 8 cents?

○

○

○

○

○

○

○

○

LESSON II.

1 in 2, 2 times	2 in 2, once
2 in 4, 2 times	2 in 4, 2 times
3 in 6, 2 times	2 in 6, 3 times
4 in 8, 2 times	2 in 8, 4 times
5 in 10, 2 times	2 in 10, 5 times
6 in 12, 2 times	2 in 12, 6 times
7 in 14, 2 times	2 in 14, 7 times
8 in 16, 2 times	2 in 16, 8 times
9 in 18, 2 times	2 in 18, 9 times
10 in 20, 2 times	2 in 20, 10 times

1. How many apples, at 2 cents each, can you buy for 4 cents? *Ans.* 2. Why?

Because you can buy as many apples for 4 cents, as 2 cents, the price of 1 apple, is contained times in 4 cents: 2 in 4, 2 times: and, you can buy 2 apples.

2. How many lemons, at 2 cents each, can you buy for 6 cents? Why?

3. How many lemons, at 2 cents each, can you buy for 8 cents? Why?

4. How many peaches, at 5 cents each, can you buy for 10 cents? Why?

5. How many yards of ribbon, at 2 cents a yard, can you buy for 12 cents? Why?

6. How many oranges, at 7 cents each, can you buy for 14 cents? Why?

7. How many tops, at 2 cents each, can you buy for 16 cents? Why?

8. How many kites, at 9 cents each, can you buy for 18 cents? Why?

9. Ten in 20, how many times? Why?

LESSON III.

1 in 3, 3 times	3 in 3, once
2 in 6, 3 times	3 in 6, 2 times
3 in 9, 3 times	3 in 9, 3 times
4 in 12, 3 times	3 in 12, 4 times
5 in 15, 3 times	3 in 15, 5 times
6 in 18, 3 times	3 in 18, 6 times
7 in 21, 3 times	3 in 21, 7 times
8 in 24, 3 times	3 in 24, 8 times
9 in 27, 3 times	3 in 27, 9 times
10 in 30, 3 times	3 in 30, 10 times

1. How many lemons, at 3 cents each, can you buy for 3 cents? Why?

2. If you have 6 balls, how many groups, of 3 balls each, can you make out of them?

Three in 6 how many times? *Ans.* 2 times. Why? *Because 2 times 3 are 6.*

3. Jane paid 9 cents for ribbon, at 3 cents a yard: how much did she get? Why?

4. When pears are 4 cents each, how many can you buy for 12 cents? Why?

5. It requires 3 feet to make 1 yard: how many yards are there in 15 feet? Why?

6. If 1 orange is worth 3 lemons, how many oranges can you get for 18 lemons? Why?

7. Three in 18, how many times? 3 in 21, how many times? Why?

8. How much cloth, at 8 dollars a yard, can you buy for 24 dollars? Why?

9. Nine in 27, how many times? 10 in 30, how many times? Why?

LESSON IV.

1 in 4, 4 times	4 in 4, once
2 in 8, 4 times	4 in 8, 2 times
3 in 12, 4 times	4 in 12, 3 times
4 in 16, 4 times	4 in 16, 4 times
5 in 20, 4 times	4 in 20, 5 times
6 in 24, 4 times	4 in 24, 6 times
7 in 28, 4 times	4 in 28, 7 times
8 in 32, 4 times	4 in 32, 8 times
9 in 36, 4 times	4 in 36, 9 times
10 in 40, 4 times	4 in 40, 10 times

1. How many times can 4 cents be taken out of 4 cents? Why?

2. How many oranges, at 4 cents each, can you buy for 8 cents? Why?

3. There are 4 quarts in one gallon: how many gallons are there in 12 quarts? Why?

4. If 16 apples be equally divided among 4 boys, how many will each have? Why?

5. There are 20 scholars sitting on 4 benches: how many scholars on each? Why?

6. If 4 sheets of paper make 1 copy-book, how many copy-books will 24 sheets make? Why?

7. If 1 top cost 7 cents, how many tops can be bought for 28 cents? Why?

8. At 4 cents each, how many peaches can you buy for 32 cents? Why?

9. At 9 cents each, how many cakes can you buy for 36 cents? Why?

10. If a spelling book cost 10 cents, how many spelling books can you buy for 40 cents? Why?

LESSON V.

1 in 5, 5 times	5 in 5, once
2 in 10, 5 times	5 in 10, 2 times
3 in 15, 5 times	5 in 15, 3 times
4 in 20, 5 times	5 in 20, 4 times
5 in 25, 5 times	5 in 25, 5 times
6 in 30, 5 times	5 in 30, 6 times
7 in 35, 5 times	5 in 35, 7 times
8 in 40, 5 times	5 in 40, 8 times
9 in 45, 5 times	5 in 45, 9 times
10 in 50, 5 times	5 in 50, 10 times

1. How many oranges, at 5 cents each, can you buy for 5 cents? Why?

2. How many oranges, at 5 cents each, can you buy for 10 cents? Why?

3. How many oranges, at 5 cents each, can you buy for 15 cents? Why?

4. How many citrons, at 5 cents each, can you buy for 20 cents? Why?

5. How many citrons, at 5 cents each, can you buy for 25 cents? Why?

6. How many melons, at 5 cents each, can you buy for 30 cents? Why?

7. How many times can 7 cents be taken from 35 cents? Why?

8. How many cakes, at 8 cents each, can you buy for 40 cents? Why?

9. How many tops, at 5 cents each, can you buy for 45 cents? Why?

10. How many pencils, at 5 cents each, can be bought for 50 cents? Why?

LESSON VI.

1 in 6,	6 times	6 in 6,	once
2 in 12,	6 times	6 in 12,	2 times
3 in 18,	6 times	6 in 18,	3 times
4 in 24,	6 times	6 in 24,	4 times
5 in 30,	6 times	6 in 30,	5 times
6 in 36,	6 times	6 in 36,	6 times
7 in 42,	6 times	6 in 42,	7 times
8 in 48,	6 times	6 in 48,	8 times
9 in 54,	6 times	6 in 54,	9 times
10 in 60,	6 times	6 in 60,	10 times

1. How many melons, at 6 cents each, can you buy for 6 cents? Why?

2. How many melons, at 6 cents each, can you buy for 12 cents? Why?

3. How many oranges, at 6 cents each, can you buy for 18 cents? Why?

4. How many times can you take 6 dollars from 24 dollars? Why?

5. How many knives, at 6 cents each, can you buy for 30 cents? Why?

6. How many pounds of flour, at 6 cents a pound, must be given for 36 cents? Why?

7. How many lemons, at 6 cents each, can you buy for 42 cents? Why?

8. How many pencils, at 8 cents each, can you buy for 48 cents? Why?

9. How many rings, at 6 dimes each, can you buy for 54 dimes? Why?

10. How many times can 6 apples be taken from 60 apples? Why?

LESSON VII.

1 in 7,	7 times	7 in 7,	once
2 in 14,	7 times	7 in 14,	2 times
3 in 21,	7 times	7 in 21,	3 times
4 in 28,	7 times	7 in 28,	4 times
5 in 35,	7 times	7 in 35,	5 times
6 in 42,	7 times	7 in 42,	6 times
7 in 49,	7 times	7 in 49,	7 times
8 in 56,	7 times	7 in 56,	8 times
9 in 63,	7 times	7 in 63,	9 times
10 in 70,	7 times	7 in 70,	10 times

1. How many times can you take 7 marbles out of a bag containing 7 marbles? Why?

2. If you divide 14 apples into piles, each containing 7, how many piles will there be?

3. If 1 pine-apple cost 7 cents, how many pine-apples can you buy for 21 cents? Why?

4. At 7 cents each, how many melons can be bought for 28 cents? Why?

5. Seven boys share 35 peaches equally: how many do each receive? Why?

6. A man traveled 42 miles in 7 hours: how far did he travel in 1 hour? Why?

7. I paid 49 cents for 7 quarts of strawberries: how much did I pay a quart? Why?

8. There are 56 trees in 7 rows: how many trees are there in 1 row? Why?

9. At 9 cents a yard, how many yards of muslin can you buy for 63 cents? Why?

10. I paid 70 dollars for 7 cows: how much did I pay for each? Why?

LESSON VIII.

1 in 8,	8 times	8 in 8,	once
2 in 16,	8 times	8 in 16,	2 times
3 in 24,	8 times	8 in 24,	3 times
4 in 32,	8 times	8 in 32,	4 times
5 in 40,	8 times	8 in 40,	5 times
6 in 48,	8 times	8 in 48,	6 times
7 in 56,	8 times	8 in 56,	7 times
8 in 64,	8 times	8 in 64,	8 times
9 in 72,	8 times	8 in 72,	9 times
10 in 80,	8 times	8 in 80,	10 times

1. How many melons, at 8 cents each, can you buy for 8 cents? Why?

2. There are 8 quarts in a peck: how many pecks are there in 16 quarts? Why?

3. If 1 orange is worth 8 apples, how many oranges can you get for 24 apples? Why?

4. How many pencils, at 8 cents each, can you buy for 32 cents? Why?

5. If 8 yards of calico cost 40 cents, how much will 1 yard cost? Why?

6. If 1 cane cost 8 dimes, how many canes can be bought for 48 dimes? Why?

7. At 8 cents each, how many tops can you buy for 56 cents? Why?

8. If 1 peach is worth 8 plums, how many peaches are worth 64 plums? Why?

9. Harry paid 72 cents for 9 slates: how much did he pay for each? Why?

10. I gave 80 cents for 8 spelling books: how much did they cost a-piece? Why?

LESSON IX.

1 in 9, 9 times	9 in 9, once
2 in 18, 9 times	9 in 18, 2 times
3 in 27, 9 times	9 in 27, 3 times
4 in 36, 9 times	9 in 36, 4 times
5 in 45, 9 times	9 in 45, 5 times
6 in 54, 9 times	9 in 54, 6 times
7 in 63, 9 times	9 in 63, 7 times
8 in 72, 9 times	9 in 72, 8 times
9 in 81, 9 times	9 in 81, 9 times
10 in 90, 9 times	9 in 90, 10 times

1. At 9 cents a pound, how many pounds of sugar can you buy for 9 cents? Why?

2. At 9 cents each, how many pen-knives can you buy for 18 cents? Why?

3. If 9 pounds of meat cost 27 cents, how much will 1 pound cost? Why?

4. Melons were sold at the rate of 4 for 36 cents: how much was that a-piece? Why?

5. A father divided 45 cents, equally among his 5 children: how much did each get? Why?

6. Mary gave 54 cents for 9 spools of thread: how much did she give for each? Why?

7. A boy rode 63 miles in 9 days: how many miles did he ride in 1 day? Why?

8. At 9 cents a yard, how many yards of ribbon can you buy for 72 cents? Why?

9. If 81 blocks be placed in 9 rows, how many will there be in each row? Why?

10. How many books, at 9 cents each, can you buy for 90 cents? Why?

LESSON X.

1 in 10,	10 times	10 in 10,	once
2 in 20,	10 times	10 in 20,	2 times
3 in 30,	10 times	10 in 30,	3 times
4 in 40,	10 times	10 in 40,	4 times
5 in 50,	10 times	10 in 50,	5 times
6 in 60,	10 times	10 in 60,	6 times
7 in 70,	10 times	10 in 70,	7 times
8 in 80,	10 times	10 in 80,	8 times
9 in 90,	10 times	10 in 90,	9 times
10 in 100,	10 times	10 in 100,	10 times

1. How many melons, at 10 cents each, can you buy for 10 cents? Why?

2. How many pen-knives, at 10 cents each, can you buy for 20 cents? Why?

3. If 1 quince is worth 10 apples, how many quinces can you get for 30 apples? Why?

4. At 10 cents each, how many whips can you buy for 40 cents? Why?

5. At 10 cents each, how many oranges can be bought for 50 cents? Why?

6. I paid 60 cents for eggs, at 6 cents a dozen: how many dozen did I get? Why?

7. How many coats, at 10 dollars each, can be bought for 70 dollars? Why?

8. How many kites, at 10 cents each, can I buy for 80 cents? Why?

9. How many knives, at 10 cents each, can be bought for 90 cents? Why?

10. There are 10 cents in 1 dime: how many dimes are there in 100 cents? Why?

LESSON XI.

REVIEW OF THE PRECEDING.

TO TEACHERS.—The question, *how many times?* is to be put by the instructor, after each combination.

2 in 4	4 in 12	4 in 32	5 in 35	9 in 54
2 in 8	3 in 18	5 in 30	6 in 42	7 in 63
3 in 6	2 in 20	6 in 18	4 in 40	8 in 64
5 in 10	1 in 9	7 in 28	8 in 40	9 in 63
5 in 20	9 in 27	8 in 16	7 in 42	6 in 60
2 in 10	4 in 24	6 in 24	5 in 45	9 in 36
3 in 9	3 in 21	9 in 18	8 in 48	8 in 72
4 in 8	2 in 16	7 in 35	7 in 49	9 in 72
2 in 12	5 in 25	6 in 30	5 in 50	7 in 70
3 in 15	4 in 28	5 in 40	6 in 54	9 in 81
2 in 14	3 in 24	9 in 45	8 in 56	8 in 80
3 in 12	7 in 14	4 in 36	7 in 56	9 in 90

1. I paid 24 cents for 8 sheets of paper: how much was that a sheet?

2. John gave 42 marbles for 6 cents: how many did he give for 1 cent?

3. There are 4 quarters in 1 dollar: how many dollars are there in 36 quarters?

4. If 5 cakes cost 35 cents, how many cents will 1 cake cost?

5. If a lady travel 81 miles in 9 hours, how far will she travel in 1 hour?

6. If 45 apples be divided equally among 5 boys, how many will each receive?

7. At 10 cents each, how many spelling books can you buy for 70 cents?

LESSON XII.

1. If you have 6 cents, and pay 2 cents each for lemons, how many can you buy?

2. If you divide 12 plums equally among 3 boys, how many will each receive?

3. How many miles an hour must a man walk, to travel 16 miles in 4 hours?

4. When cloth is 5 dollars a yard, how many yards can be purchased for 15 dollars?

5. Mary has 21 cents: she wishes to buy oranges at 3 cents each: how many can she buy?

6. If 6 sheets of paper make 1 copy-book, how many books can you make out of 18 sheets?

7. If you divide 12 apples equally among 4 boys, how many will each have?

8. If 3 lemons are worth 1 orange, how many oranges can you get for 24 lemons?

9. If you divide 30 apples equally among 6 boys, what will be the share of each?

10. At 3 dimes each, how many rings can you buy for 27 dimes?

11. At 9 cents a pound, how many pounds of sugar can be bought for 63 cents?

12. There are 8 quarts in 1 peck: how many pecks are there in 72 quarts?

13. There are 7 days in 1 week: how many weeks are there in 49 days?

14. How many sleds, at 6 dimes each, can be bought for 54 dimes?

15. If 1 lemon cost 4 cents, how many lemons can you buy for 40 cents?

16. Frank bought 70 plums, at the rate of 7 for a cent: how much did he pay for them?

REVIEW. LESSON I.

1. How many are 10 and 1? 2 and 10?
10 and 3? 4 and 10? 10 and 5? 6 and 10?
10 and 7? 8 and 10? 10 and 9? 10 and 10?

2. How many are 11 and 1? 2 and 11?
11 and 3? 4 and 11? 11 and 5? 6 and 11?
11 and 7? 8 and 11? 11 and 9? 10 and 11?

3. How many are 12 and 1? 2 and 12?
12 and 3? 4 and 12? 12 and 5? 6 and 12?
12 and 7? 8 and 12? 12 and 9? 10 and 12?

4. How many are 13 and 1? 2 and 13?
13 and 3? 4 and 13? 13 and 5? 6 and 13?
13 and 7? 8 and 13? 13 and 9? 10 and 13?

5. How many are 14 and 1? 2 and 14?
14 and 3? 4 and 14? 14 and 5? 6 and 14?
14 and 7? 8 and 14? 14 and 9? 10 and 14?

6. How many are 15 and 1? 2 and 15?
15 and 3? 4 and 15? 15 and 5? 6 and 15?
15 and 7? 8 and 15? 15 and 9? 10 and 15?

7. How many are 16 and 1? 2 and 16?
16 and 3? 4 and 16? 16 and 5? 6 and 16?
16 and 7? 8 and 16? 16 and 9? 10 and 16?

8. How many are 17 and 1? 2 and 17?
17 and 3? 4 and 17? 17 and 5? 6 and 17?
17 and 7? 8 and 17? 17 and 9? 10 and 17?

9. How many are 18 and 1? 2 and 18?
18 and 3? 4 and 18? 18 and 5? 6 and 18?
18 and 7? 8 and 18? 18 and 9? 10 and 18?

10. How many are 19 and 1? 2 and 19?
19 and 3? 4 and 19? 19 and 5? 6 and 19?
19 and 7? 8 and 19? 19 and 9? 10 and 19?

LESSON II.

1. How many are 20 and 1? 2 and 20?
20 and 3? 4 and 20? 20 and 5? 6 and 20?
20 and 7? 8 and 20? 20 and 9? 10 and 20?

2. How many are 30 and 1? 2 and 30?
30 and 3? 4 and 30? 30 and 5? 6 and 30?
30 and 7? 8 and 30? 30 and 9? 10 and 30?

3. How many are 40 and 1? 2 and 40?
40 and 3? 4 and 40? 40 and 5? 6 and 40?
40 and 7? 8 and 40? 40 and 9? 10 and 40?

4. How many are 50 and 1? 2 and 50?
50 and 3? 4 and 50? 50 and 5? 6 and 50?
50 and 7? 8 and 50? 50 and 9? 10 and 50?

5. How many are 22 and 2? 3 and 22?
22 and 4? 5 and 22? 22 and 6? 7 and 22?
22 and 8? 9 and 22? 22 and 10?

6. How many are 24 and 2? 3 and 24?
24 and 4? 5 and 24? 24 and 6? 7 and 24?
24 and 8? 9 and 24? 24 and 10?

7. How many are 26 and 2? 3 and 26?
26 and 4? 5 and 26? 26 and 6? 7 and 26?
26 and 8? 9 and 26? 26 and 10?

8. How many are 29 and 2? 3 and 29?
29 and 4? 5 and 29? 29 and 6? 7 and 29?
29 and 8? 9 and 29? 29 and 10?

9. How many are 33 and 2? 3 and 33?
33 and 4? 5 and 33? 33 and 6? 7 and 33?
33 and 8? 9 and 33? 33 and 10?

10. How many are 35 and 2? 3 and 35?
35 and 4? 5 and 35? 35 and 6? 7 and 35?
35 and 8? 9 and 35? 35 and 10?

LESSON III.

1. How many are 6 and 4? 16 and 4?
26 and 4? 36 and 4? 46 and 4? 56 and 4?
2. How many are 7 and 4? 17 and 4?
27 and 4? 37 and 4? 47 and 4? 57 and 4?
3. How many are 7 and 5? 17 and 5?
27 and 5? 37 and 5? 47 and 5? 57 and 5?
4. How many are 7 and 6? 17 and 6?
27 and 6? 37 and 6? 47 and 6? 57 and 6?
5. How many are 8 and 2? 18 and 2?
28 and 2? 38 and 2? 48 and 2? 58 and 2?
6. How many are 8 and 3? 18 and 3?
28 and 3? 38 and 3? 48 and 3? 58 and 3?
7. How many are 8 and 4? 18 and 4?
28 and 4? 38 and 4? 48 and 4? 58 and 4?
8. How many are 8 and 5? 18 and 5?
28 and 5? 38 and 5? 48 and 5? 58 and 5?
9. How many are 8 and 6? 18 and 6?
28 and 6? 38 and 6? 48 and 6? 58 and 6?
10. How many are 9 and 2? 19 and 2?
29 and 2? 39 and 2? 49 and 2? 59 and 2?
11. How many are 9 and 3? 19 and 3?
29 and 3? 39 and 3? 49 and 3? 59 and 3?
12. How many are 9 and 4? 19 and 4?
29 and 4? 39 and 4? 49 and 4? 59 and 4?
13. How many are 9 and 5? 19 and 5?
29 and 5? 39 and 5? 49 and 5? 59 and 5?
14. How many are 9 and 6? 19 and 6?
29 and 6? 39 and 6? 49 and 6? 59 and 6?
15. How many are 9 and 7? 19 and 7?
29 and 7? 39 and 7? 49 and 7? 59 and 7?

LESSON IV.

1. I had 15 cents, and Charles gave me 5 more: how many cents did I then have? •

2. My slate cost 12 cents, and my spelling book, 10 cents: how much did both cost?

3. Mary paid 20 cents for a reader, and 5 cents for a pencil: how much did she pay for both?

4. Frank's coat cost 14 dollars, and his boots 5 dollars: how much did both cost?

5. Harry is 12 years old, and Susan is 9: how many years in both their ages?

6. Frank had 16 cents, and his aunt gave him 9 more: how many did he then have?

7. John owes me 13 cents, and Samuel, 10 cents: how much do both owe me?

8. I bought a whip for 18 cents: at what price must I sell it, to make 6 cents?

9. Harvey is now 17 years old: in 10 years from this time, how old will he be?

10. In a school, there are 19 boys in reading, and 10 in arithmetic: how many boys in both?

11. Mary had 36 chickens, and she bought 4 more: how many had she then?

12. Oliver had 17 ducks, and his mother gave him 4 more: how many had he then?

13. Cora spent 47 cents for books, and 4 cents for pens: how much did she spend?

14. Edwin has 8 oranges more than Anna, and Anna has 19: how many has Edwin?

15. William had 40 peaches more than John: John had 10: how many had William?

16. George bought a sled for 27 cents, and paid 5 cents to have it repaired: how much was it then worth?

LESSON V.

1. Thomas had 15 marbles, and lost 4: how many had he then?

2. Oscar had 16 cents, and spent 3: how many had he left?

3. Daniel, having 17 plums, gave his sister 4 of them: how many did he then have?

4. Charles bought 18 peaches, and gave 5 to a poor man: how many had he left?

5. Six and how many make 19? 7 and how many make 20?

6. If you have 20 cents, and spend 6, how many will you have left?

7. Sarah had 31 needles, and lost 2: how many had she left?

8. A boy had 33 chickens, and sold 4: how many had he remaining?

9. Lucy had 35 eggs, and broke 6 of them: how many had she then?

10. Henry had 10 cents, and his mother gave him enough to make 40: how many cents did she give?

11. William had 56 cents, and spent all but 7 of them for school books: how many cents did he spend?

12. Frank gathered 45 quarts of chestnuts: after selling part of them, he had only 8 quarts left: how many quarts did he sell?

13. Harry Lee owed me 53 cents for cakes: he paid 6 cents: how many cents did he then owe me?

14. Thomas had 43 marbles, and he gave 10 of them to his brother Charles: how many had he remaining?

LESSON VI.

ADDITION AND SUBTRACTION.

1. One and 2 and 3, less 4, are how many?
2. One and 3 and 4, less 5, are how many?
3. One and 4 and 5, less 6, are how many?
4. One and 5 and 6, less 7, are how many?
5. One and 6 and 7, less 8, are how many?
6. One and 7 and 8, less 9, are how many?
7. One and 8 and 9, less 10, are how many?
8. Two and 2 and 3, less 4, are how many?
9. Two and 3 and 4, less 5, are how many?
10. Two and 4 and 5, less 6, are how many?

11. Two and 5 and 6, less 7, are how many?
12. Two and 6 and 7, less 8, are how many?
13. Two and 7 and 8, less 9, are how many?
14. Two and 8 and 9, less 10, are how many?
15. Three and 3 and 4, less 5, are how many?
16. Three and 4 and 5, less 6, are how many?
17. Three and 5 and 6, less 7, are how many?
18. Three and 6 and 7, less 8, are how many?
19. Three and 7 and 8, less 9, are how many?
20. Four and 3 and 5, less 6, are how many?

21. Four and 4 and 6, less 7, are how many?
22. Four and 5 and 7, less 8, are how many?
23. Four and 6 and 8, less 9, are how many?
24. Five and 3 and 5, less 6, are how many?
25. Five and 4 and 6, less 7, are how many?
26. Five and 5 and 7, less 8, are how many?
27. Six and 2 and 3, less 4, are how many?
28. Six and 3 and 4, less 5, are how many?
29. Six and 4 and 5, less 6, are how many?
30. Seven and 3 and 6, less 7, are how many?

LESSON VII.

ADDITION AND SUBTRACTION.

1. How many are 5 and 9 and 3, less 4?
2. How many are 6 and 10 and 2, less 3?
3. How many are 4 and 9 and 5, less 6?
4. How many are 5 and 7 and 8, less 4?
5. How many are 8 and 3 and 10, less 3?
6. How many are 10 and 4 and 8, less 4?
7. How many are 9 and 8 and 5, less 6?
8. How many are 7 and 9 and 7, less 6?
9. How many are 9 and 6 and 8, less 7?
10. How many are 8 and 8 and 10, less 9?
11. How many are 9 and 9 and 9, less 10?
12. How many are 11 and 2 and 3, less 4?
13. How many are 11 and 5 and 2, less 7?
14. How many are 10 and 11 and 1, less 10?
15. How many are 10 and 9 and 8, less 7?
16. How many are 10 and 8 and 6, less 5?
17. How many are 9 and 8 and 7, less 10?
18. How many are 8 and 9 and 10, less 8?
19. How many are 9 and 11 and 10, less 8?
20. How many are 8 and 11 and 8, less 9?
21. How many are 20 and 2 and 4, less 6?
22. How many are 20 and 6 and 4, less 10?
23. How many are 29 and 4 and 8, less 6?
24. How many are 26 and 7 and 9, less 7?
25. How many are 24 and 9 and 10, less 8?
26. How many are 40 and 3 and 7, less 4?
27. How many are 18 and 8 and 10, less 6?
28. How many are 40 and 4 and 5, less 6?
29. How many are 44 and 4 and 8, less 7?
30. How many are 35 and 9 and 10, less 6?

LESSON VIII.

PROMISCUOUS QUESTIONS.

1. Frank had 19 cents, and spent 5: how many cents had he left?

2. Henry had 15 cents: he spent 4 cents for a top, and 6 cents for a kite: how many cents had he remaining?

3. Mother gave me 10 cents, and father gave me enough to make 25 cents: how many cents did father give?

4. I had 22 oranges: I gave 4 to brother Charles, and 6 to sister Mary: how many did I give away, and how many had I left?

5. Thomas had 25 cents: he paid 5 cents for ink, and 10 cents for a copy-book: how many cents had he left?

6. My uncle gave me 35 cents: I bought a pen-knife for 20 cents, and a spelling book for 10 cents: how many cents had I left?

7. Frank paid 10 cents for 3 oranges, and 18 cents for 5 lemons: how many cents did he pay for all?

8. Charles is 4 years old, and his father is 32 years old: in how many years will Charles be as old as his father now is?

9. I paid 35 cents for a pair of skates, and 10 cents for a book: how much more than the book did the skates cost?

10. Harry had 40 cents given him on Christmas day: he spent 10 cents for toys, and 26 cents for books: how many cents had he remaining?

11. Mary had 50 cents: she gave 25 cents for a reader, 10 cents for a slate, and 5 cents for a sponge: how many cents did she pay for all, and how many had she left?

LESSON IX.

MULTIPLICATION AND SUBTRACTION.

1. How many are 3 times 3, less 4?
2. How many are 4 times 4, less 5?
3. How many are 5 times 5, less 6?
4. How many are 6 times 6, less 7?
5. How many are 7 times 7, less 8?
6. How many are 8 times 8, less 9?
7. How many are 9 times 9, less 10?
8. How many are 3 times 5, less 3?
9. How many are 3 times 7, less 4?
10. How many are 4 times 5, less 5?

11. How many are 5 times 4, less 8?
12. How many are 5 times 6, less 10?
13. How many are 5 times 8, less 10?
14. How many are 6 times 3, less 2?
15. How many are 5 times 7, less 5?
16. How many are 6 times 8, less 6?
17. How many are 6 times 10, less 3?
18. How many are 4 times 10, less 4?
19. How many are 5 times 10, less 6?
20. How many are 4 times 9, less 7?

21. How many are 7 times 4, less 3?
22. How many are 6 times 7, less 3?
23. How many are 8 times 4, less 5?
24. How many are 9 times 2, less 7?
25. How many are 10 times 2, less 5?
26. How many are 8 times 5, less 10?
27. How many are 9 times 5, less 6?
28. How many are 10 times 3, less 8?
29. How many are 8 times 9, less 4?
30. How many are 10 times 5, less 9?

LESSON X.

1. Four are how many times 1? How many times 2?
2. Six are how many times 2? How many times 3?
3. Eight are how many times 2? How many times 4?
4. Nine are how many times 3?
5. Ten are how many times 2? How many times 5?
6. Twelve are how many times 2? How many times 3? 4?
7. Fourteen are how many times 2? How many times 7?
8. Fifteen are how many times 3? How many times 5?
9. Sixteen are how many times 2? How many times 4? 8?
10. Eighteen are how many times 2? How many times 3? 6? 9?
11. Twenty are how many times 2? How many times 4? 5? 10?
12. Twenty-one are how many times 3? How many times 7?
13. Twenty-four are how many times 3? How many times 4? 6? 8?
14. Twenty-five are how many times 5?
15. Twenty-seven are how many times 3? How many times 9?
16. Twenty-eight are how many times 4? How many times 7?
17. Thirty are how many times 3? How many times 5? 6? 10?
18. Thirty-two are how many times 4? How many times 8?

LESSON XI.

1. Thirty-five are how many times 5? How many times 7?
2. Thirty-six are how many times 4? How many times 6? 9?
3. Forty are how many times 4? How many times 5? 8? 10?
4. Forty-two are how many times 6? How many times 7?
5. Forty-five are how many times 5? How many times 9?
6. Forty-eight are how many times 6? How many times 8?
7. Forty-nine are how many times 7?
8. Fifty are how many times 5? How many times 10?
9. Fifty-four are how many times 6? How many times 9?
10. Fifty-six are how many times 7? How many times 8?
11. Sixty are how many times 6? How many times 10?
12. Sixty-three are how many times 7? How many times 9?
13. Sixty-four are how many times 8?
14. Seventy are how many times 7? How many times 10?
15. Seventy-two are how many times 8? How many times 9?
16. Eighty are how many times 8? How many times 10?
17. Eighty-one are how many times 9?
18. Ninety are how many times 9? How many times 10?
19. One hundred are how many times 10?

LESSON XII.

PROMISCUOUS QUESTIONS.

1. George bought 2¹/₂ peaches, at 3 cents each, and 2 oranges, at 5 cents each: how many cents did he pay for all?

2. Edwin has 4 oranges, and Thomas has 3 times as many as Edwin: how many oranges have both?

3. Anna is 6 years old, and Jane is twice as old as Anna, and 2 years more: how old is Jane? How many years in both their ages?

4. How many pine apples, at 9 cents each, can you buy for 27 cents? for 45 cents? for 63 cents? for 72 cents?

5. I bought 10 cents worth of lemons, giving 2 cents for each lemon: how many lemons did I purchase?

6. If 3 men can do a certain piece of work in 5 days, how many men can do the same work in 1 day?

7. If a man can travel 90 miles in 9 hours, how many miles can he travel in 1¹/₂ hour? In what time could he travel 20 miles?

8. Samuel bought 3 books, at 10 cents each, and a toy for 7 cents: how many cents did he pay for all?

9. If 4 men can do a certain piece of work in 9 days, in how many days can 1 man do the same work?

10. If 10 peaches are worth 1 orange, how many oranges are 60 peaches worth? How many are 80 peaches worth?

11. I bought 3 pounds of raisins, at 8 cents a pound, and 2 oranges for 10 cents: how much did all cost?

LESSON XIII.

MULTIPLICATION AND DIVISION.

1. How many times 5, are 3 times 10?
2. How many times 7, are 7 times 4?
3. How many times 2, are 6 times 3?
4. How many times 4, are 2 times 6?
5. How many times 3, are 6 times 5?
6. How many times 4, are 8 times 5?
7. How many times 6, are 2 times 9?
8. How many times 8, are 4 times 10?
9. How many times 5, are 5 times 9?
10. How many times 6, are 6 times 10?

11. How many times 7, are 7 times 9?
12. How many times 5, are 5 times 6?
13. How many times 8, are 8 times 7?
14. How many times 4, are 5 times 8?
15. How many times 6, are 6 times 10?
16. How many times 9, are 9 times 8?
17. How many times 2, are 2 times 7?
18. How many times 3, are 3 times 7?
19. How many times 4, are 4 times 10?
20. How many times 5, are 5 times 10?

21. How many times 2, are 2 times 6?
22. How many times 6, are 4 times 9?
23. How many times 7, are 7 times 3?
24. How many times 7, are 7 times 5?
25. How many times 8, are 8 times 3?
26. How many times 10, are 6 times 5?
27. How many times 10, are 5 times 8?
28. How many times 10, are 10 times 2?
29. How many times 10, are 8 times 5?
30. How many times 10, are 10 times 5?

LESSON XIV.

PROMISCUOUS QUESTIONS.

1. Charles and Henry have each 10 marbles: Charles gave 6 of his to Henry: how many did each then have?

2. William Jones owed me 20 cents: he gave me 3 peaches, worth 4 cents each, and an orange, worth 5 cents: how much was then due?

3. I bought 3 oranges, at 5 cents each, and 2 lemons, at 4 cents each: how many cents did I pay for all?

4. When 3 lemons sold for 15 cents, John gave 1 lemon, and 5 cents in money, for a book: how much did the book cost?

5. Harry bought 3 rabbits for 30 cents, and sold them for 39 cents: how many cents did he gain?

6. I bought 3 dozen eggs, at 6 cents a dozen, and sold them, at 8 cents a dozen: how much did I make?

7. Frank bought 4 flags, at 10 cents each, and 3, at 3 cents each: how many flags did he buy, and how much did they cost?

8. John gave 30 cents in money, and 3 peaches, worth 5 cents, for a sled: how much did the sled cost?

9 I paid 25 cents for 5 pounds of meat, and 10 cents for a melon: how many cents did I pay for all?

10. Mary bought 3 quarts of chestnuts, at 10 cents a quart, and a doll for 20 cents: how much did all cost?

11. Frank bought 5 books, at 7 cents each, and sold them, at 9 cents each: how many cents did he make?

LESSON XV.

MULTIPLICATION AND DIVISION.

1. If 2 peaches cost 6 cents, how much will 1 peach cost? If 1 peach cost 3 cents, how much will 3 peaches cost?

2. If 2 oranges cost 8 cents, how much will 1 orange cost? If 1 orange cost 4 cents, how much will 3 oranges cost?

3. If 3 tops cost 9 cents, how many cents will 1 top cost? If 1 top cost 3 cents, how many cents will 4 tops cost?

4. If 3 cakes cost 12 cents, how many cents will 1 cake cost? If 1 cake cost 4 cents, how many cents will 4 cakes cost?

5. If 4 pens cost 8 cents, how much will 1 pen cost? If 1 pen cost 2 cents, how much will 5 pens cost?

6. If 5 cents buy 1 top, how many tops will 25 cents buy? If 1 top cost 5 cents, how much will 4 tops cost?

7. When 4 apples sell for a cent, how many cents will 16 apples sell for? If 1 cent pay for 4 apples, how many apples will 5 cents pay for?

8. When 5 oranges sell for 20 cents, how much will 1 orange sell for? If 1 orange cost 4 cents, what will 6 oranges cost?

9. If 5 oranges are worth 10 pears, how many pears is 1 orange worth? If 1 orange is worth 2 pears, how many pears are 7 oranges worth?

10. If 4 spools of thread cost 24 cents, how much will 1 spool cost? If 1 spool of thread cost 6 cents, what will 8 spools cost?

11. If 6 peaches cost 24 cents, how much will 1 peach cost? If 1 peach cost 4 cents, what will 9 peaches cost?

LESSON XVI.

MULTIPLICATION AND DIVISION.

1. If 3 lemons cost 9 cents, how much will 4 lemons cost?
2. If 2 oranges cost 8 cents, how much will 3 oranges cost?
3. If 5 men earn 10 dollars in 1 day, how much can 6 men earn in the same time?
4. If 3 pounds of butter cost 30 cents, how much will 4 pounds cost?
5. If 4 dozen eggs cost 20 cents, how much will 6 dozen cost?
6. If 3 lead pencils cost 18 cents, how many cents will 5 lead pencils cost?
7. If 4 pine apples cost 32 cents, how many cents will 5 pine apples cost?
8. If 7 tops cost 14 cents, how many cents will 5 tops cost?
9. If 6 pens cost 18 cents, how many cents will 10 pens cost?
10. If 3 books cost 30 cents, how many cents will 6 books cost?
11. If 3 quarts of berries cost 21 cents, how many cents will 7 quarts cost?
12. What will 6 peaches cost, if 10 peaches cost 50 cents?
13. What will 60 plums cost, if 12 plums cost 2 cents?
14. What will 63 marbles cost, if 14 marbles cost 2 cents?
15. What will 3 caps cost, if 2 caps cost 6 dimes?
16. What will 5 melons cost, if 3 melons cost 27 cents?

LESSON XVII.

MULTIPLICATION AND DIVISION.

1. James bought 3 lemons, at 2 cents each, and paid for them with oranges at 3 cents each: how many oranges did it take?

2. Mary bought 3 yards of ribbon, at 4 cents a yard: how many cents did it cost? She paid for it with eggs, at 2 cents a dozen: how many dozen did it take?

3. Daniel bought 8 tops, at 2 cents each, and paid for them with oranges, at 4 cents each: how many oranges did it take?

4. Francis bought 9 marbles, at 2 cents each, and paid for them with tops, at 3 cents each: how many tops did it take?

5. Sarah bought 4 thimbles, at 5 cents each, and paid for them with cherries, at 2 cents a quart: how many quarts did it take?

6. A man bought 8 yards of cloth, at 3 dollars a yard, and paid for it with flour, at 4 dollars a barrel: how many barrels did it take?

7. Thomas bought 3 oranges, at 5 cents each, and paid for them with chestnuts, at 3 cents a quart: how many quarts did he give?

8. I bought 4 barrels of flour, at 10 dollars a barrel, and paid for it with apples, at 5 dollars a barrel: how many barrels of apples did I give?

9. I bought 3 pounds of raisins, at 8 cents a pound, and paid for them with melons, at 6 cents each: how many melons did I give?

10. How many oranges, at 6 cents each, will pay for 10 lemons, at 3 cents each?

11. Henry bought 4 pine apples, at 10 cents each, and paid for them with pears, at 8 cents each: how many pears did he give?

LESSON XVIII.

MULTIPLICATION AND DIVISION.

1. How many pine apples, at 10 cents each, will pay for 5 peaches, at 6 cents each?
2. How many pencils, at 5 cents each, will pay for 4 spelling-books, at 10 cents each?
3. How many kites, at 4 cents each, will pay for 6 lemons, at 6 cents each?
4. How many peaches, at 5 cents each, will pay for 4 slates, at 10 cents each?
5. I bought 3 quarts of strawberries, at 10 cents a quart, and paid for them with chestnuts, at 6 cents a quart: how many quarts did it take?
6. I bought 5 dozen figs, at 8 cents a dozen, and paid for them with chickens, at 10 cents each: how many chickens did I give?
7. If 4 men can mow a field of grass in 5 days, in how many days can 10 men mow the same field?
8. How much cloth, at 6 dollars a yard, will pay for 4 barrels of flour, at 9 dollars a barrel?
9. How many slates, at 3 dimes each, will pay for 2 geographies, at 6 dimes each?
10. How many bottles of ink, at 8 cents each, will pay for 10 oranges, at 4 cents each?
11. How many oranges, at 4 cents each, will pay for 2 books, at 10 cents each?
12. If 6 men can do a piece of work in 8 days, how long will it take 4 men?
13. If 7 barrels of flour cost 84 dollars, what will 5 barrels cost?
14. An orchard contains 8 rows of trees, and 6 trees in a row; if there were but 4 rows, how many trees would there be in a row?

LESSON XIX.

TABLES.

NOTE.—In the schools of some of the larger cities where this book is extensively used, the pupils studying it are required to learn the tables. For the use of such schools, the following pages have been inserted.

UNITED STATES MONEY.

- 10 mills, marked m., make 1 cent, marked ct.
- 10 cents “ 1 dime, “ d.
- 10 dimes, or 100 cents “ 1 dollar, “ \$.
- 10 dollars “ 1 eagle, “ E.

1. Repeat the table of United States money.
2. How many mills are there in 1 cent?
3. How many mills in 2 cents? In 3? In 5?
4. How many cents in 2 dimes? In 3? In 4?
5. How many dimes in 3 dollars? In 7? In 9?
6. How many cents in 30 mills? In 20? In 50?
7. How many dimes in 40 cents? In 80? In 60?
8. How many dollars in 6 eagles? In 8? In 4?
9. How many dollars in 40 dimes? In 60? In 90?
10. How many dimes in 25 cents? In 50? In 75?
11. If 1 lemon costs 2 cents, how many cents will 5 lemons cost? How many dimes?
12. James bought 6 pencils at 5 cents each: how many dimes did they cost?
13. How many dollars will pay for 5 bushels of wheat, at 8 dimes a bushel?
14. How many cents in 1 dollar? In 2 dollars?

LESSON XX.

ENGLISH MONEY.

4 farthings	(far.)	make	1 penny,	marked	d.
12 pence	.	.	.	.	1 shilling, " s.
20 shillings	.	.	.	.	1 pound, " £.

1. Repeat the table of English money.
2. How many farthings in 1 penny? In 2? In 3?
3. How many shillings in 12 pence? In 36? In 60?
4. How many pence in 1 shilling? In 3? In 6?
5. How many shillings in 1 pound? In 3? In 5?
6. How many pounds in 40 shillings? In 20? In 60?
7. How many farthings in 6 pence? In 12?
8. How many farthings in 1 shilling?
9. If an arithmetic costs 2 shillings, what will 6 arithmetics cost?
10. If 1 yard of cloth costs 4 shillings, how many pounds will 10 yards cost?
11. A boy had 9 pence; his father gave him enough to make one shilling: how much did he receive from his father?
12. How many books at 5 shillings each can be bought for 1 pound?
13. How many tops at 3 pence each can be bought for 2 shillings?
14. If one pound of sugar costs 8 pence, what will 5 pounds cost?
15. If 10 yards of cloth cost one pound, how many shillings does 1 yard cost?
16. At 10 cents a pound, how much sugar can be bought for 9 dimes?

LESSON - XXI.

TROY WEIGHT.

24 grains (gr.) make 1 pennyweight, marked pwt.

20 pennyweights . 1 ounce, " oz.

12 ounces . . . 1 pound, " lb.

1. Repeat the table of Troy Weight.
2. How many grains in 1 pennyweight? In 2?
3. How many ounces in 2 pounds? In 3? In 5?
4. How many pounds in 24 ounces? In 48?
5. How many ounces in 20 pennyweights? In 60?
6. How many pennyweights in 2 ounces? In 3?
7. How many pennyweights in 24 grains?
8. How many pounds in 60 ounces? In 36? In 72?
9. If 1 pennyweight of silver is worth 7 cents, what is the value of 6 pennyweights?
10. If 1 ounce of gold is worth 15 dollars, what are 2 ounces worth?
11. If 1 sheep costs 7 dollars, what cost 5 sheep?
12. How much wood at 6 dollars a cord will pay for 3 plows at 12 dollars each?
13. John had 6 cents and Henry 5; their mother had 6 times as many as both: how many had she?
14. Jane had 16 cherries; she lost 7, and then gathered twice as many as she had left: how many had she then?
15. A boy bought a sled for 25 dimes, and sold it for 19 dimes: how many cents did he lose?
16. James has 6 marbles; his brother has 4 times as many: how many have both?
17. Repeat the table of English Money.

LESSON XXII.

APOTHECARIES WEIGHT.

20 grains (gr.)	make	1 scruple,	marked	℥.
3 scruples		1 dram,	"	3.
8 drams		1 ounce	"	3.
12 ounces		1 pound,	"	lb.

1. Repeat the table of Apothecaries Weight.
2. How many grains in 2 scruples? In 3? In 4?
3. How many scruples in 5 drams? In 7? In 8?
4. How many pounds in 36 ounces? In 60? In 48?
5. How many ounces in 16 drams? In 32? In 56?
6. How many ounces in 4 pounds? In 6? In 5?
7. How many drams in 9 scruples? In 12? In 21?
8. How many drams in 4 ounces? In 6? In 8?
9. How many scruples in 40 grains? In 60? In 80?
10. If 1 dram of medicine costs 7 cents, what cost 8 drams or 1 ounce?
11. How many ounces in 96 drams of opium?
12. A little girl divided 60 plums among 5 companions: how many did each receive?
13. Harry bought 8 oranges at 6 cents each: how much did they cost?
14. If 11 yards of cloth cost 44 dollars, what was the cost of 1 yard?
15. What cost 4 sheep, if 7 sheep cost 28 dollars?
16. If 5 weeks' board costs 30 dollars, what will 7 weeks' board cost?
17. What cost 12 lemons, if 5 lemons cost 15 cents?

LESSON XXIII.

AVOIRDUPOIS WEIGHT.

16 drams (dr.)	make 1 ounce,	marked	oz.
16 ounces	1 pound,	"	lb.
25 pounds	1 quarter,	"	qr.
4 quarters or 100 lb.	1 hundredweight,	"	cwt.
20 hundredweight	1 ton,	"	T.

1. Repeat the table of Avoirdupois Weight.
2. How many drams in 2 ounces? In 3?
3. How many ounces in 1 pound? In 2? In 3?
4. How many pounds in 2 quarters? In 1? In 3?
5. How many ounces in 32 drams? In 48?
6. How many pounds in 48 ounces? In 16? In 32?
7. How many quarters in 50 pounds? In 100?
8. How many quarters in 4 hundredweight? In 5?
9. How many hundredweight in 16 quarters? In 24?
10. How many hundredweight in 2 tons? In 3?
11. How many tons in 40 hundredweight? In 60?
12. If 1 pound of rice costs 12 cents, what is the cost of 5 pounds?
13. What cost 7 pounds of grapes, if 10 pounds cost 100 cents?
14. If 1 ton of hay costs 8 dollars, what cost 10 tons?
15. How many tons of coal at 8 dollars a ton, can be bought for 40 dollars?
16. At 7 cents a pound, what cost 3 castings, each weighing 4 pounds?
17. Repeat the table of United States Money.

LESSON XXIV.

DRY MEASURE.

2 pints (pt.)	make 1 quart,	marked	qt.
8 quarts	1 peck,	"	pk.
4 pecks	1 bushel,	"	bu.

1. Repeat the table of Dry Measure.
2. How many pints in 2 quarts? In 3? In 4?
3. How many pecks in 2 bushels? In 3? In 5?
4. How many quarts in 6 pints? In 8? In 10?
5. How many pecks in 16 quarts? In 24? In 32?
6. How many quarts in 3 pecks? In 5? In 8?
7. How many bushels in 12 pecks? In 20? In 32?
8. How many pints in 6 quarts? In 8? In 7?
9. If 1 quart of meal costs 2 cents, what will 5 quarts cost?
10. If 3 pecks of apples cost 36 cents, what will 1 peck cost? 4 pecks?
11. If 1 bushel of clover-seed costs 7 dollars, what will 5 bushels cost?
12. If 1 peck of oats costs 8 cents, what cost 4 pecks or 1 bushel?
13. At 7 dimes a pint, what cost 3 pints of turnip-seed?
14. At 3 dollars a bushel, what cost 8 bushels of flax-seed?
15. If 1 quart of peaches costs 10 cents, what costs 1 peck?
16. Paid 60 cents for 5 quarts of blackberries: what costs 1 quart?

LESSON XXV.

LIQUID OR WINE MEASURE

4 gills (gi.)	make 1 pint,	marked	pt.
2 pints	1 quart,	"	qt.
4 quarts	1 gallon,	"	gal.
31½ gallons	1 barrel,	"	bl.
63 gallons	1 hogshead,	"	hhd.
4 hogsheads	1 tun,	"	T.

1. Repeat the table of Wine Measure.
2. How many gills in 1 pint? In 4? In 3?
3. How many quarts in 4 pints? In 6? In 10?
4. How many pints in 16 gills? In 32? In 28?
5. How many pints in 6 quarts? In 8? In 12?
6. How many gallons in 8 quarts? In 20? In 36?
7. How many quarts in 4 gallons? In 8? In 12?
8. How many tuns in 40 hogsheads? In 24? In 8?
9. How many hogsheads in 3 tuns? In 8? In 9?
10. At 6 cents a gill, what cost 7 gills of coal oil?
11. At 4 dollars a gallon, what is the cost of 9 gallons of alcohol?
12. If 7 quarts of vinegar cost 49 cents, how much is that per quart?
13. If 3 pints of molasses cost 36 cents, what cost 1 pint? 5 pints?
14. If 6 gills of olive oil cost 48 cents, what costs 1 pint?
15. How much milk at 5 cents a quart, can be bought for 40 cents?
16. How many dimes will pay for 5 pounds of brass at 10 cents a pound?

LESSON XXVI.

LONG MEASURE.

12 inches	(in.)	make 1 foot,	marked ft.
3 feet	. . . . .	1 yard,	" yd.
5½ yards or 16½ ft.	. . . . .	1 rod,	" rd.
40 rods or 220 yd.	. . . . .	1 furlong,	" fur.
8 furlongs or 320 rd.	. . . . .	1 mile,	" mi.

1. Repeat the table of Long Measure.
2. How many feet in 24 inches? In 36? In 60?
3. How many inches in 3 feet? In 4? In 6?
4. How many feet in 3 yards? In 6? In 9?
5. How many yards in 12 feet? In 18? In 24?
6. How many furlongs in 1 mile? In 6? In 8?
7. How many miles in 16 furlongs? In 24? In 32?
8. If 1 yard of cloth costs 4 dollars, what will 6 yards cost?
9. Paid 45 dollars for 9 yards of silk: what cost 1 yard?
10. Paid 48 dollars for 12 feet of iron railing: what did it cost a foot?
11. If a boy steps 2 feet at one step, how many feet will he go in 11 steps?
12. How many bushels in 36 pecks? In 48?
13. How many gallons in a hogshead?
14. How many ounces in a pound?
15. How many pence in 3 shillings?
16. How many dimes in 70 cents? In 30? In 80?
17. If 4 envelopes cost 1 cent, how many can be bought for 9 cents?

LESSON XXVII.

SQUARE MEASURE.

144	square inches	make	1 square foot,	marked	sq. ft.
9	square feet	. .	1 square yard,	"	sq. yd.
30 $\frac{1}{4}$	square yards	. .	1 square rod,	"	sq. rd.
40	square rods	. .	1 rood,	"	R.
4	roods	. . . .	1 acre,	"	A.
640	acres	. . . .	1 square mile,	"	sq. mi.

1. Repeat the table of Square Measure.
2. How many square feet in 3 square yards? In 5?
3. How many roods in 3 acres? In 8? In 11?
4. How many square yards in 27 square feet?
5. How many acres in 16 roods? In 28? In 48?
6. What cost 9 acres of land at 6 dollars an acre?
7. If 1 square yard of plastering cost 12 cents, what cost 5 yards?
8. How many acres of land at 8 dollars an acre, can be purchased for 56 dollars?
9. How many pecks of oats, at 9 cents a peck, can be bought for 45 cents?
10. If one yard of cloth costs 6 dollars, what cost 9 yards?
11. How many bushels of wheat can be bought for 18 dollars, if 1 bushel costs 2 dollars?
12. What cost 12 pounds of rice at 12 cents a pound?
13. If 3 yards of muslin cost 6 dimes, what cost 5 yards?
14. How many quarts of milk at 8 cents a quart, can be bought for 4 dimes?

LESSON XXVIII.

SOLID OR CUBIC MEASURE.

1728 cubic inches	make	1 cubic foot,	marked	cu. ft.
27 cubic feet	. . . .	1 cubic yard,	"	cu. yd
40 feet of round timber		1 ton,	"	tn
50 " " hewn	"	1 ton,	"	tn
128 cubic feet	. . . .	1 cord,	"	C

NOTE.—A pile of wood 8 feet long, 4 feet wide, and 4 feet high contains a cord.

1. Repeat the table of Solid or Cubic Measure.
2. If 1 cord of wood costs 8 dollars, what will 6 cords cost?
3. If 1 ton of timber costs 7 dollars, what will 7 tons cost?
4. How many cubic yards of granite at 5 dollars a yard, can be purchased for 30 dollars?
5. If 1 cubic foot of ice costs 9 cents, what cost 9 cubic feet?
6. How many cubic yards of earth can be dug from a cellar for 72 cents, if 1 yard costs 9 cents?
7. How much will 10 yards of cloth cost at 4 dimes a yard?
8. How many oranges at 5 cents a piece, can be bought for 3 dimes?
9. How many dollars will 5 books cost at 8 dimes each?
10. A boy having 5 dimes, gave 35 cents for a knife: how much had he left?
11. If James reads 6 pages each day, how many pages will he read in 7 days?

LESSON XXIX.

TIME MEASURE.

60 seconds (sec.)	make	1 minute,	mark'd	min.
60 minutes		1 hour,	"	hr.
24 hours		1 day,	"	da.
365 days, 6 hours (365½ da.)		1 year,	"	yr.
100 years		1 century,	"	cen.

ALSO,

7 days	1 week,	"	wk.
4 weeks	1 month,	"	mo.
12 calendar months . .	1 year,	"	yr.

TABLE OF THE MONTHS.

January, 1st month, has 31 da.	July, 7th month, has 31 da.
February, 2d " " 28 "	August, 8th " " 31 "
March, 3d " " 31 "	September, 9th " " 30 "
April, 4th " " 30 "	October, 10th " " 31 "
May, 5th " " 31 "	November, 11th " " 30 "
June, 6th " " 30 "	December, 12th " " 31 "

March, April, and May are the months of *Spring*;
 June, July, and August, of *Summer*; September, Oc-
 tober, and November, of *Autumn*; and December,
 January, and February, of *Winter*.

1. Repeat the table of Time Measure.
2. How many weeks in 21 days? In 28?
3. How many months in 3 years? In 7? In 9?
4. How many days in 4 weeks? In 6? In 8?
5. How many years in 36 months? In 60? In 12?
6. Repeat the table of Avoirdupois Weight.

LESSON XXX.

CIRCULAR MEASURE.

60 seconds (")	make	1 minute,	marked	'.
60 minutes		1 degree,	"	°.
30 degrees		1 sign,	"	S.
12 signs, or 360° . .		1 circle,	"	C.

PAPER.

24 sheets of paper	make	1 quire.
20 quires		1 ream.
2 reams		1 bundle.
5 bundles		1 bale.

BOOKS.

When a sheet of paper is so folded that it makes

2 leaves, or 4 pages,	the book is called a folio,	fol.
4 " " 8 " " "	a quarto,	4to.
8 " " 16 " " "	an octavo,	8vo.
12 " " 24 " " "	a duodecimo,	12mo.
16 " " 32 " " "	a	16mo.
18 " " 36 " " "	an	18mo.

TABLES.

12 things make 1 dozen.	6 feet	make 1 fathom.
12 dozen " 1 gross.	4 inches	" 1 hand.
12 gross " 1 great gross.	4 rods	" 1 chain.
20 things " 1 score.	100 links	" 1 chain.

196 pounds of flour	make 1 barrel.
200 pounds of beef or pork	" 1 barrel.
60 pounds of wheat	" 1 bushel.
56 pounds of corn	" 1 bushel.

LESSON XXXI.

REVIEW OF TABLES.

1. How many pecks in 4 bushels? In 5? In 2?
2. How many cents in 5 dimes? In 3? In 7?
3. How many quarts in 16 pints? In 24? In 12?
4. How many quarters in 3 hundredweight? In 7?
5. How many yards in 18 feet? In 27? In 24?
6. How many inches in 4 feet? In 6? In 5?
7. How many bushels in 8 pecks? In 40? In 36?
8. How many square feet in 2 square yards? In 6?
9. How many furlongs in 8 miles? In 4? In 7?
10. How many pence in 40 farthings? In 32?
11. How many hundredweight in 36 quarters?
12. How many Apothecaries' drams in 3 ounces?
13. How many Troy ounces in 1 pound? In 5?
14. How many gallons in 16 quarts? In 48? In 28?
15. How many acres in 12 roods? In 24? In 40?
16. How many sheets of paper in 1 quire? In 2?
17. How many days in 2 weeks? In 3? In 4?
18. How many feet in 3 fathoms? In 9? In 7?
19. How many feet in 12 yards? In 7? In 8?
20. How many gills in 6 pints? In 4? In 7?
21. How many weeks in 14 days? In 28? In 35?
22. How many shillings in 48 pence? In 60? In 24?
23. How many dollars in 3 eagles? In 5? In 7?
24. How many square yards in 27 square feet?
25. How many ounces Apothecaries weight in 40 drams?

LESSON XXXII.

1. How many are 5 and 4 and 3 and 2?
2. How many are 7 and 5 and 6 and 3?
3. How many are 8 and 6 and 8 and 1?
4. How many are 9 and 7 and 2 less 10?
5. How many are 4 and 6 and 8 less 12?
6. How many are 8 and 5 and 3 less 9?
7. How many are 10 and 3 and 9 less 11?
8. How many are 7 and 9 and 11 less 5?
9. How many are 6 and 2 and 9 less 7?
10. James had 21 cents and spent 7: how many had he left?
11. Henry's father gave him 8 cents, and his mother enough to make 24 cents: how many cents did his mother give him?
12. I paid 15 cents for paper, 5 cents for pens, and 6 cents for ink: what was the whole cost?
13. John had 50 cents; he spent 25 cents for a book and 10 cents for candy: how much had he left?
14. Mary bought 3 pencils at 5 cents each, and a book for 25 cents: what was the cost of all?
15. If one lemon costs 2 cents, how many can be bought for 16 cents?
16. George has 5 marbles and John has three times as many: how many has John?
17. If 1 yard of cloth costs 5 shillings, how many yards can be bought for 1 pound English money?
18. If 6 yards of ribbon cost 48 cents, what cost 10 yards?

LESSON XXXIII.

NOTE.—The following method of exercising pupils on the fundamental rules, will be found to have the happiest effect in concentrating the attention of the class, and exciting a lively interest in the exercises. It also renders pupils remarkably expert in the performance of the operations. The success of the whole, however, depends upon the instructor; he must propose the exercises *orally*, and carry on the operations in his own mind, giving examples that are not too difficult, and deciding promptly as to the correctness of results.

1. Five, add 6, add 3, add 2, subtract 8, subtract 3, multiply by 7, subtract 3, divide by 4, add 6=what?

$$2. 4+5-2+7+5-6+2\div 5\times 8+3\div 9=\text{what?}$$

NOTE.—Teacher should explain the *signs* here used.

$$3. 12-3-5+6-7+9\times 2+6\div 3+8=\text{what?}$$

$$4. 3\times 2+4\times 3\div 5+3\times 2\div 9\times 4-7+5=\text{what?}$$

$$5. 4\times 3+3\div 5+6\times 2+4\div 11+6\times 2+4=\text{what?}$$

$$6. 7\times 3-5\div 4+1\times 8\div 10\times 3+2\div 7\times 10=\text{what?}$$

$$7. 9\times 6-4\div 10+3\times 4+3\div 7+2\times 4-7=\text{what?}$$

$$8. 6\times 5+5\div 7-5+4\times 10+8\div 6-6+12=\text{what?}$$

$$9. 11+5\div 8+5\times 4+5\div 11+5\div 4+5+11=\text{what?}$$

$$10. 21\div 3+3\times 3-3\div 3+3\times 4-4\div 4+4=\text{what?}$$

$$11. 35\div 5+5\times 5-5\div 5+1\div 6+6\times 6-8=\text{what?}$$

$$12. 60-4\div 7+3\times 4-2\div 6+5\times 6\div 9+2=\text{what?}$$

$$13. 12\times 5+3\div 9\times 7+5\div 6+1\times 10+8\div 9=\text{what?}$$

$$14. 42+3\div 5+3\times 7-3\div 9+12\div 3\times 9=\text{what?}$$

$$15. 8\times 8+8\div 8-8+3\times 9-7-8\div 3+9=\text{what?}$$

$$16. 7\times 7+7\div 7-7+4\times 12\div 6\times 2-6\div 2=\text{what?}$$

$$17. 9\times 7+3\div 6+1\div 2\times 8+2\div 5+8\div 9=\text{what?}$$

18. $4 \times 12 - 6 \div 6 + 2 \times 5 + 3 \div 12 \times 7 + 2 \div 6 = \text{what?}$
19. $5 + 9 + 4 + 7 \div 5 + 13 \div 2 - 1 \times 4 + 3 \div 7 = \text{what?}$
20. $7 + 6 + 11 \div 3 \times 5 \div 4 + 5 \div 3 \times 4 + 1 \div 7 = \text{what?}$
21. $14 \div 2 + 2 \times 9 + 3 \div 7 \times 3 + 6 \div 7 + 9 \div 5 = \text{what?}$
22. $3 \times 4 \times 7 - 4 \div 8 + 2 \times 5 + 4 \div 8 \times 7 - 8 = \text{what?}$
23. $5 + 6 + 7 + 10 \div 4 + 9 + 6 + 3 \div 5 \times 2 + 4 = \text{what?}$
24. $28 + 7 \div 5 + 12 + 6 \div 5 + 8 - 12 \times 9 \times 9 = \text{what?}$
25. $19 - 10 \div 3 + 16 + 7 - 8 \div 2 \times 7 + 1 \div 8 = \text{what?}$
26. $6 \times 3 + 6 \div 12 \times 7 + 4 \div 3 \times 7 + 3 + 4 \div 7 = \text{what?}$
27. $7 \times 7 - 7 - 8 + 2 \div 6 \times 9 - 3 - 8 - 7 \div 12 = \text{what?}$
28. $6 \times 3 + 2 \div 4 \times 5 + 3 \div 7 \times 9 - 9 \div 3 \times 8 = \text{what?}$
29. $7 \times 7 + 1 \div 5 \times 10 + 8 \div 12 \times 9 + 3 \div 7 + 8 = \text{what?}$
30. $6 \times 9 + 2 \div 8 \times 9 - 8 \div 11 \times 9 - 3 \div 6 - 7 = \text{what?}$
31. $3 \times 3 + 7 \div 4 + 3 \times 7 - 1 \div 6 + 1 \div 3 \times 8 = \text{what?}$
32. $7 \times 4 - 1 \div 3 \times 4 \div 6 \times 10 - 4 \div 8 \times 7 + 1 = \text{what?}$
33. $10 \times 10 - 4 \div 12 \times 8 - 1 \div 9 \times 12 - 3 \div 9 = \text{what?}$
34. $12 \times 12 - 6 - 10 - 7 \div 11 + 4 \div 3 \times 12 = \text{what?}$
35. $17 + 9 + 2 \div 7 \times 9 + 12 \div 6 \times 9 \div 12 + 13 = \text{what?}$
36. $27 \div 3 \times 4 - 4 \div 4 \times 5 + 2 \div 6 \times 9 + 1 \div 8 = \text{what?}$
37. $43 - 12 + 4 \div 7 \times 6 + 10 \div 5 \times 4 + 4 \div 9 = \text{what?}$
38. $15 + 5 \times 3 + 4 \div 8 - 2 \times 7 + 12 \div 9 + 3 \times 10 + 6 \div 12 \times 8 - 1 - 7 - 7 = \text{what?}$

The learner who has thoroughly mastered this little volume, is well prepared to enter upon the study of "Ray's Arithmetic, Second Book," in which the pupil is lead by simple and easy combinations of numbers, through the various *intellectual* operations with which it is necessary every pupil should be acquainted, who expects to understand the *principles* of Arithmetic.

Eclectic Temperance Physiologies.



I. THE HOUSE I LIVE IN.

Primary Temperance Physiology. With special reference to the nature of alcoholic drinks and narcotics, and their effect upon the human system. 12mo, full cloth, 96 pp. Fully illustrated with engravings and full-page colored plates. Price, 30c.

II. YOUTH'S TEMPERANCE MANUAL.

Lessons for the Young. Intended to give such knowledge of the human body as will enable children to comprehend clearly the nature of alcoholic drinks and narcotics, and their effects upon the human system. 12mo, cloth, about 120 pp. Finely illustrated with engravings, diagrams, and a colored plate of the brain. Price, 40c.

III. ECLECTIC GUIDE TO HEALTH.

Scientific Temperance Physiology and Hygiene. The effect of alcoholic drinks and narcotics on the human system is fully considered in connection with each division of the subject, to meet the requirements of the laws in several States requiring Temperance Physiology to be taught in the public schools. 190 pp., cloth. Profusely illustrated by engravings and full-page colored plates. price, 60c.



• Van Antwerp, Bragg & Co., Publishers •

CINCINNATI • NEW YORK • BOSTON

Digitized by Google