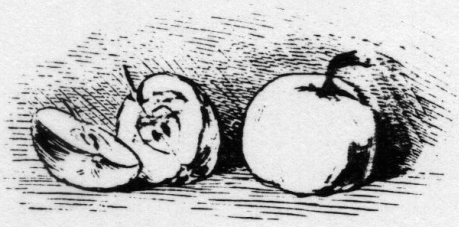
FRACTIONS

LESSON LV.

1. Into how many parts has one of the apples in the picture been divided?

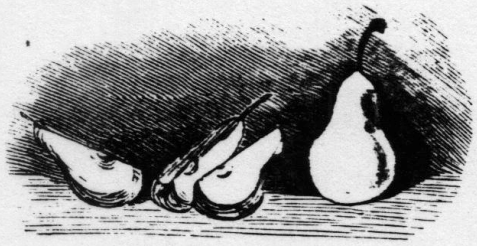
2. How do these two parts compare in size?



3. What is one of these two equal parts called? *One-half.*

4. How many halves of the apple make the whole apple?

5. Into what number of parts is one of the pears divided?



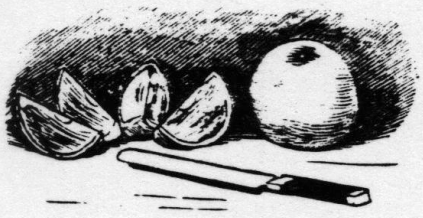
6. How do these three parts compare in size?

7. What is one of these three equal parts called? *One-third.*

8. What are two of these three equal parts called?

9. How many thirds are there in the whole pear?

10. Into how many parts has one of the oranges in the picture been divided?



11. How do these four parts compare in size?

12. What is one of these four equal parts called? *One-fourth.*

13. What are two of the parts called? What are three of the parts called?

14. How many fourths are there in the whole orange?

One or more of the equal parts of any thing is called a ***Fraction.***

Two numbers written one above the other, with a line between them, are used to express a fraction.

The number below the line shows the number of equal parts into which the thing is divided.

It is called the ***Denominator.***

The number above the line shows how many parts form the fraction.

It is called the ***Numerator.***

One-half is therefore expressed thus: $\frac{1}{2}$.

One-third is therefore expressed thus: $\frac{1}{3}$.

One-fourth is therefore expressed thus: $\frac{1}{4}$.

Two-fourths is therefore expressed thus: $\frac{2}{4}$.

Three-fourths is therefore expressed thus: $\frac{3}{4}$.

Slate Exercises.

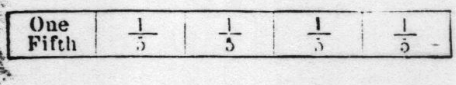
Copy and read the following:

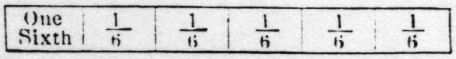
$\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{2}{3}$ $\frac{2}{4}$ $\frac{3}{4}$

Express in figures the following:

One-half	Two-thirds	One-fourth
One-third	Three-fourths	Two-fourths

LESSON LVI.





1. Draw a line and divide it into 5 equal parts.

2. What is one of these parts called? *One-fifth.*

3. What are two of the parts called? What are four of the parts called?

4. How many fifths make the whole line?

5. Draw a line and divide it into 6 equal parts.

6. What is one of these parts called? *One-sixth.*

7. What are three of the parts called? What are five of the parts called?

8. How many sixths make the whole line?

9. If a pie is divided into seven equal pieces, what part of the pie is one piece? Three pieces? Four pieces? How many sevenths make the whole pie?

10. If a pound of candy is equally divided among eight boys, what part of the pound will one boy receive?

11. How many eighths of it will four boys receive? Three boys? Six boys?

12. A miller divided a barrel of flour equally among nine poor families. What part of the barrel of flour did he give to each family?

13. How many parts did he give to five families? To eight families?

14. If a dollar is divided into ten equal parts, what is one of the parts called? What are four of the parts called? What are ten of the parts called?

Slate Exercises.

Copy and read the following:

$\frac{3}{5}$	$\frac{4}{7}$	$\frac{2}{3}$	$\frac{1}{2}$	$\frac{6}{9}$	$\frac{8}{9}$	$\frac{7}{10}$	$\frac{5}{6}$	$\frac{3}{4}$
$\frac{1}{3}$	$\frac{1}{5}$	$\frac{7}{9}$	$\frac{6}{7}$	$\frac{3}{8}$	$\frac{4}{5}$	$\frac{8}{10}$	$\frac{2}{6}$	$\frac{5}{8}$

Express in figures the following:

3 fifths	4 fifths	3 eighths
3 sixths	2 thirds	5 eighths
5 tenths	8 tenths	6 eighths
2 ninths	7 ninths	5 sevenths

LESSON LVII.

1. Mary had 1 half of a dollar, and her mother gave her 1 half of a dollar more. How much money had she then?

2. How many thirds are 1 third and 2 thirds?

3. If John gave $\frac{1}{4}$ of an orange to his sister, and $\frac{2}{4}$ to his cousin, how many fourths did he give both?

4. Henry earned $\frac{1}{5}$ of a dollar in one day, and $\frac{2}{5}$ of a dollar the next day. How much money did he earn in both days? How many fifths are $\frac{1}{5}$ and $\frac{3}{5}$?

5. Jane bought $\frac{3}{6}$ of a yard of ribbon, and Caroline bought $\frac{2}{6}$ of a yard? How many sixths did both buy? How many sixths are $\frac{1}{6}$, $\frac{4}{6}$ and $\frac{1}{6}$?

6. A farmer sold $\frac{2}{7}$ of a bin of wheat to one man, and $\frac{3}{7}$ to another. How many sevenths did he sell?

7. How many eighths are $\frac{3}{8}$, $\frac{2}{8}$ and $\frac{1}{8}$?

8. William bought $2\frac{1}{4}$ yards of cloth for a pair of pantaloons, $\frac{3}{4}$ of a yard for a vest, and $4\frac{1}{4}$ yards for a coat. How many yards of cloth did he buy?

9. A man plowed $1\frac{3}{10}$ acres one day, and $1\frac{4}{10}$ acres the next day. How many acres did he plow?

10. A laborer bought $\frac{3}{5}$ of a ton of coal at one time, $\frac{2}{5}$ of a ton at another, and $\frac{1}{5}$ of a ton at another. How much coal did he buy?

Slate Exercises.

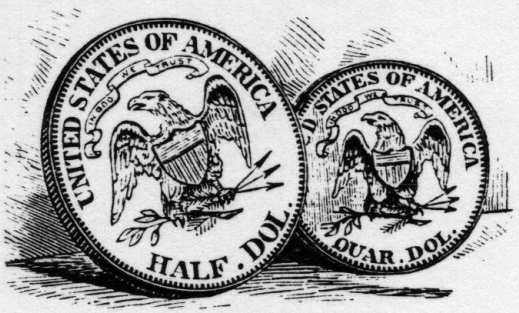
Copy and add the following:

$\frac{1}{3}+\frac{2}{3}+\frac{1}{3}$ $\quad$ $\frac{5}{7}+\frac{1}{7}+\frac{2}{7}$ $\quad$ $\frac{3}{8}+\frac{5}{8}+\frac{1}{8}$

$\frac{1}{2}+\frac{1}{2}+\frac{1}{2}$ $\quad$ $\frac{4}{9}+\frac{3}{9}+\frac{5}{9}$ $\quad$ $\frac{2}{6}+\frac{3}{6}+\frac{4}{6}$

LESSON LVIII.

1. Lucy had $\frac{1}{2}$ of a dollar, and her brother gave her $\frac{1}{4}$ of a dollar more. How much money did she have then?

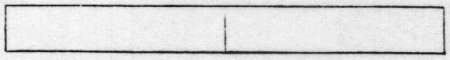


2. How many halves of a dollar are equal to one dollar?

3. How many fourths of a dollar are equal to one dollar?

4. How many fourths of a dollar are equal to one-half of a dollar? How many fourths are there in $\frac{1}{2}$?

5. How many fourths of a dollar are there in $\frac{1}{2}$ and $\frac{1}{4}$ of a dollar? How many fourths in $\frac{1}{2}$ and $\frac{1}{4}$?



6. Draw two lines of the same length.

7. Divide the first line into 2 equal parts.

8. Divide the second line into 6 equal parts.

9. What is one part of the first line called?

10. What is one part of the second line called?

11. What are three parts of the second line called?

12. How do three parts of the second line compare in length with one part of the first line?

13. How many sixths of a line are equal to one-half of a line?

14. How many sixths are there in $\frac{1}{2}$ and $\frac{1}{6}$? How many sixths are there in $\frac{1}{2}$ and $\frac{2}{6}$? In $\frac{1}{2}$ and $\frac{5}{6}$?

15. How many eighths are equal to one-fourth? How many eighths are there in $\frac{1}{4}$ and $\frac{3}{8}$?

16. Mary bought $2\frac{1}{3}$ yards of lace one day, and $2\frac{1}{6}$ yards the next day. How many yards did she buy?

17. John bought $2\frac{1}{4}$ pounds of raisins, and Joseph bought $3\frac{3}{8}$ pounds. How many pounds did they buy?

18. How many ninths are $\frac{1}{3}$ and $\frac{1}{9}$? $\frac{2}{3}$ and $\frac{2}{9}$?

19. How many eighths are $\frac{1}{4}$ and $\frac{3}{8}$?

Slate Exercises.

Copy and add the following:

$\frac{2}{3}+\frac{4}{9}+\frac{2}{9}$ $\quad$ $\frac{1}{2}+\frac{5}{8}+\frac{3}{8}$ $\quad$ $\frac{1}{6}+\frac{2}{6}+\frac{2}{3}$

$\frac{1}{3}+\frac{1}{6}+\frac{2}{3}$ $\quad$ $\frac{1}{2}+\frac{2}{4}+\frac{3}{8}$ $\quad$ $\frac{1}{5}+\frac{3}{5}+\frac{2}{10}$

LESSON LIX.

1. Henry had 3 fourths of an orange, but gave 1 fourth of it to his cousin. How much had he left?

2. If a boy had $\frac{3}{5}$ of a pound of candy, but gave $\frac{1}{5}$ of it away, how much had he left? $\frac{3}{5} - \frac{1}{5} = ?$

3. If I have $\frac{3}{4}$ of a dollar, and spend $\frac{1}{4}$ of a dollar, what part of a dollar will I have left?

4. A girl having $\frac{5}{10}$ of a dollar, paid $\frac{3}{10}$ of a dollar for thread. How much had she left?

5. From $\frac{6}{7}$ take $\frac{2}{7}$. From $\frac{5}{6}$ take $\frac{1}{6}$.

6. If Julia divides a loaf of cake into 8 equal parts, and gives away $\frac{3}{8}$ of it, how many eighths will she have left?

7. A man chopped $\frac{5}{9}$ of a cord of wood in the forenoon, and $\frac{8}{9}$ of a cord in the afternoon. How much more did he chop in the afternoon than in the forenoon? $\frac{8}{9} - \frac{5}{9} = ?$

8. Gilbert owns $\frac{3}{4}$ of a boat, and Carl the remainder. What part does Carl own?

9. Oscar bought a pair of skates for $\frac{7}{10}$ of a dollar, and sold them for $\frac{5}{10}$ of a dollar. What part of a dollar did he lose? $\frac{7}{10} - \frac{5}{10} = ?$

10. How much more than $\frac{2}{6}$ of a pound is $\frac{5}{6}$ of a pound? $\frac{5}{6} - \frac{2}{6} = ?$

11. In a school $\frac{5}{9}$ of the pupils are girls, and the rest are boys. What part of the school is boys?

12. How many more than $3\frac{1}{2}$ are $8\frac{1}{2}$?

13. A grocer having $10\frac{2}{8}$ pounds of butter, sold 4 pounds of it. How much had he left?

14. A tailor had $12\frac{7}{8}$ yards of cloth, and sold $3\frac{5}{8}$ yards. How many yards had he left?

Slate Exercises.

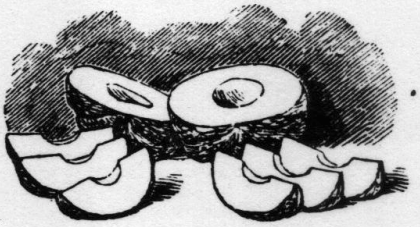
Copy and subtract the following:

$\frac{4}{6} - \frac{1}{6}$ $\quad \frac{7}{8} - \frac{2}{8}$ $\quad \frac{6}{9} - \frac{3}{9}$ $\quad \frac{4}{5} - \frac{1}{5}$

$6\frac{8}{10} - 2\frac{2}{10}$ $\quad 3\frac{4}{6} - 1\frac{3}{6}$ $\quad 8\frac{3}{4} - 2\frac{2}{4}$ $\quad 9\frac{6}{7} - 3\frac{3}{7}$

LESSON LX.

1. Into how many parts is the first melon in the picture cut? How do the parts compare in size?



2. Into how many equal parts is each of the halves of the second melon cut?

3. How many such parts are there in the two halves, or the whole melon?

4. What are these parts called?

5. How many sixths are there in one-half?

6. From $\frac{1}{2}$ subtract $\frac{1}{6}$. From $\frac{1}{2}$ subtract $\frac{2}{6}$.

7. Draw a line and divide it into 3 equal parts.

8. Draw another line of the same length, and divide it into 3 equal parts.

9. Divide each part of the second line into 3 equal parts.

10. How many of these smaller parts are there in the whole line? What are these parts called?

11. How many ninths are there in one third?

12. How many ninths are there in two thirds?

13. From $\frac{1}{3}$ of an orange take $\frac{2}{9}$ of an orange.

14. Belle having $\frac{3}{4}$ of a yard of velvet, gave away $\frac{2}{8}$ of a yard. How much had she left?

15. A grocer who had $\frac{1}{2}$ of a barrel of beans, sold $\frac{2}{6}$ of a barrel. What part of a barrel did he have left?

16. How many tenths of a dollar are there in one-fifth of a dollar? In two-fifths?

17. From $\frac{3}{5}$ of an hour take $\frac{3}{10}$ of an hour.

18. A milliner having $4\frac{3}{4}$ yards of silk, used $2\frac{3}{8}$ yards. How many had she left?

Slate Exercises.

Copy and subtract the following:

$\frac{1}{2} - \frac{1}{6}$	$\frac{2}{4} - \frac{2}{8}$	$\frac{2}{3} - \frac{4}{9}$	$\frac{4}{5} - \frac{2}{10}$
$5\frac{1}{2} - 2\frac{1}{8}$	$6\frac{2}{3} - 3\frac{1}{6}$	$5\frac{1}{4} - 2\frac{1}{8}$	$7\frac{2}{5} - 1\frac{1}{10}$
$4\frac{2}{3} - 2\frac{1}{6}$	$5\frac{1}{4} - 2\frac{1}{8}$	$5\frac{1}{2} - 3\frac{1}{8}$	$6\frac{1}{5} - 6\frac{1}{10}$

LESSON LXI.

1. Clara had a yard of cambric. She gave Grace $\frac{1}{4}$ of it, and Lizzie $\frac{3}{8}$ of it. How much had she left?

2. A bushel of wheat was divided among three persons. One received $\frac{1}{3}$ of it, another $\frac{1}{2}$ of it, and the third the rest. What part did the third person receive?

3. George paid $\frac{2}{10}$ of a dollar for a slate, $\frac{3}{5}$ of a dollar for a reading-book, and $\frac{1}{5}$ of a dollar for a writing-book. What did he pay for all?

4. A man dug $\frac{2}{6}$ of a ditch one day, $\frac{1}{3}$ of it the second day, and the rest of it the third day. What part of the ditch did he dig the third day?

5. From $\frac{1}{2} + \frac{3}{8}$ take $\frac{1}{4}$. From $\frac{1}{4} + \frac{1}{2}$ take $\frac{1}{8}$.

6. From $\frac{2}{3} + \frac{1}{9}$ take $\frac{1}{3}$. From $\frac{2}{3} + \frac{1}{6}$ take $\frac{5}{6}$.

7. To the difference between $\frac{2}{3}$ and $\frac{2}{6}$ add $\frac{1}{2}$.

8. To the difference between $\frac{7}{10}$ and $\frac{2}{5}$ add $\frac{1}{5}$.

9. $\frac{2}{3} + \frac{1}{2} + \frac{3}{6} - \frac{2}{3} = ?$ $\frac{1}{2} + \frac{2}{4} + \frac{2}{8} - \frac{1}{2} = ?$

10. Peter had $\frac{2}{5}$ of a dollar. His father gave him $\frac{2}{10}$ more, and his mother gave him enough to make the dollar. How much did his mother give him?

11. James paid $\frac{1}{2}$ of a dollar for a book, $\frac{1}{4}$ of a dollar for a slate, and $\frac{2}{8}$ of a dollar for writing-paper. How much did he pay for all? $\frac{1}{2} + \frac{1}{4} + \frac{2}{8} = ?$

12. How much more did he pay for the book than for the slate? $\frac{1}{2} - \frac{1}{4} = ?$

13. $\frac{1}{2} + \frac{1}{4} + \frac{1}{3} + \frac{1}{6} = ?$ $\frac{1}{2} + \frac{3}{8} + \frac{3}{4} + \frac{1}{3} = ?$

14. William owns $\frac{3}{4}$ of a sled, and his brother the remainder. What part of the sled does his brother own?

Slate Exercises.

Find the value of the following:

$7\frac{1}{2} + 6\frac{2}{6}$	$3\frac{2}{4} + 5\frac{1}{8}$	$4\frac{3}{5} + 6\frac{2}{10}$	$8\frac{5}{9} + 10\frac{2}{3}$
$6\frac{5}{8} - 5\frac{2}{4}$	$8\frac{1}{2} - 4\frac{2}{6}$	$6\frac{4}{5} - 3\frac{1}{10}$	$10\frac{4}{9} - 4\frac{1}{3}$
$2\frac{3}{8} + 3\frac{1}{2}$	$5\frac{2}{3} + 3\frac{1}{2}$	$6\frac{1}{4} + 2\frac{3}{8}$	$5\frac{2}{3} + 3\frac{1}{2}$
$8\frac{1}{2} - 3\frac{1}{4}$	$9\frac{3}{4} - 4\frac{1}{8}$	$8\frac{3}{10} - 4\frac{1}{5}$	$6\frac{1}{2} - 3\frac{1}{6}$

LESSON LXII.

1. If one pint of peanuts costs 1 half of a dime, what will 5 pints cost? 5 times $\frac{1}{2}$ = ?

2. If one yard of cloth costs 2 fourths of a dollar, what will 3 yards cost? 3 times $\frac{2}{4}$ = ?

3. If it takes 2 eighths of a yard of lace for one veil, how much lace will it take for 3 veils?

4. How many sevenths are 2 times 2 sevenths?

5. How many ninths are 3 times 3 ninths?

6. 3 times $\frac{2}{5}$ = ? 7 times $\frac{4}{7}$ = ? 4 times $\frac{3}{8}$ = ?

7. If a man earns 2 dollars in one day, how much will he earn in 1 half-day? $\frac{1}{2}$ of 2 = ?

8. If 1 yard of cloth costs 9 dollars, what will 1 third of a yard cost? $\frac{1}{3}$ of 9 = ?

9. When coal is 7 dollars a ton, what will 1 seventh of a ton cost? What will 2 sevenths of a ton cost?

10. Mary is 15 years old, and her sister is 2 fifths as old. How old is her sister? $15 \times \frac{2}{5}$ = ?

11. 6 multiplied by $\frac{1}{3}$ = ? By $\frac{2}{3}$? By $\frac{1}{6}$? By $\frac{3}{6}$?

12. 10 multiplied by $\frac{1}{5}$ = ? By $\frac{2}{5}$? By $\frac{3}{5}$? By $\frac{7}{10}$?

13. A boy having 20 pennies gave $\frac{1}{4}$ of them to one boy, and $\frac{1}{5}$ of them to another. How many did he give to both? How many had he left?

14. If a pound of cinnamon costs 21 cents, what will $\frac{1}{7}$ of a pound cost? What will $\frac{3}{7}$ of a pound cost?

15. If a barrel of sugar is worth 25 dollars, what is $\frac{1}{5}$ of it worth? What are $\frac{3}{5}$ of it worth?

16. What is the product of $\frac{5}{6}$ multiplied by 6? 6 multiplied by $\frac{5}{6}$?

Slate Exercises.

Find the value of the following:

6 times $\frac{5}{7}$, or	$\frac{5}{7} \times 6$.	$\frac{3}{4} \times 5$.	$\frac{4}{9} \times 2$.
5 times $\frac{3}{8}$, or	$\frac{3}{8} \times 5$.	$\frac{2}{4} \times 5$.	$\frac{7}{8} \times 5$.
$\frac{2}{3}$ of 6, or	$6 \times \frac{2}{3}$.	$8 \times \frac{2}{4}$.	$6 \times \frac{2}{3}$.
$\frac{3}{4}$ of 12, or	$12 \times \frac{3}{4}$.	$9 \times \frac{2}{3}$.	$12 \times \frac{5}{6}$.

LESSON LXIII.

1. At $\frac{1}{2}$ of a dollar each, how many books can be bought for 1 dollar? How many times is $\frac{1}{2}$ contained in 1?

2. At 2 fifths of a dollar per yard, how much cloth can be bought for 4 fifths of a dollar? How many times are $\frac{2}{5}$ contained in $\frac{4}{5}$?

3. If a boy can earn 2 eighths of a dollar per day, how long will it take him to earn 6 eighths of a dollar? How many times are $\frac{2}{8}$ contained in $\frac{6}{8}$?

4. If a man can mow $\frac{2}{7}$ of an acre in one hour, how long will it take him to mow $\frac{4}{7}$ of an acre? How many times are $\frac{2}{7}$ contained in $\frac{4}{7}$?

5. A boy having $\frac{8}{9}$ of a pound of candy, divided it equally among his playmates, giving to each $\frac{2}{9}$ of a pound. How many playmates had he?

6. A grocer having $\frac{9}{10}$ of a barrel of vinegar, sold $\frac{3}{10}$ of a barrel each day until it was all sold. In how many days did he sell it?