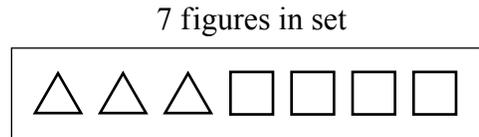


SAMPLE PROBLEMS

4. Each of the figures is an equal part of the set.
Since there are seven figures altogether, each of the figures is called a seventh of the set.



a. How many of the figures are triangles? _____

b. Fill in the correct numbers:

The triangles, all together, are _____ sevenths of the set.

The squares, all together are _____ sevenths of the set.

Explanation:

One of the really nice things about math is that we have symbols to represent important words. This makes it much easier to write numbers and sentences.

You are very familiar with the way we use place value and digits to write numerals, instead of having to write number words.

It's much easier to write \$758 instead of having to write "seven hundred fifty-eight dollars"! (But it's important to notice that we read the numeral aloud in exactly the same way that we read the words.)

You also know several symbols which are very helpful when we need to write sums, products, equations, etc.

For example, we can write

$$\begin{array}{c} 3 \text{ apples} + 4 \text{ apples} = 7 \text{ apples} \\ \text{instead of} \\ 3 \text{ apples plus } 4 \text{ apples is equal to } 7 \text{ apples} \end{array}$$

(But, again, notice that we read the equation written with the symbols exactly as we read the sentence which is written entirely with words.)

Fortunately, we also have symbols which make it easier to write fractions. Let's review the block of clay.

<u>Picture</u>	<u>Fraction Name of shaded portion</u>	<u>What Fraction Name Means</u>
	<u>3 fourths</u> of the block	3 out of 4 equal parts

The symbol for 3 fourths is $\frac{3}{4}$.

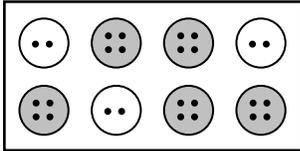
There are two important things for you to understand about this symbol:

- $\frac{3}{4}$ is read aloud as 3 fourths.
- $\frac{3}{4}$ means 3 out of 4 equal parts.

So we write: $\frac{3}{4}$ of the block is shaded.
instead of
3 fourths of the block is shaded.

And we read them aloud in exactly the same way.

Now let's review the set of buttons.

<u>Picture</u>	<u>Fraction Name of shaded portion</u>	<u>What Fraction Name Means</u>
	<u>5 eighths</u> of the buttons	5 out of 8 equal parts

What is the symbol for 5 eighths? We write it by using the two numbers which tell us what the fraction means: 5 out of 8 equal parts is written as $\frac{5}{8}$. (And remember, $\frac{5}{8}$ is read aloud as 5 eighths.)

30. Use the circle graph at right to answer these questions.

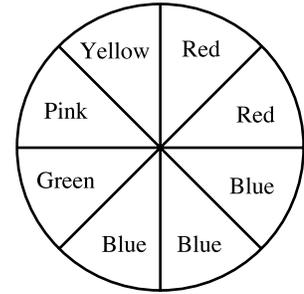
a. What fraction of the circle is blue? _____ of the circle

b. What fraction of the circle is either red or yellow?

_____ of the circle

c. What fraction of the circle is not green? _____ of the circle

d. What fraction of the circle is red? _____ of the circle



32. Read this story out loud:

Carmen got a box of chocolates for her birthday. She ate $\frac{4}{10}$ of the candies and gave $\frac{3}{10}$ of them to her sister.

(When the fractions are read aloud as 4 tenths and 3 tenths, you should think of the tenths as things—like 4 apples and 3 apples.)

a. Who ate more candies, Carmen or her sister? _____
(Which is more, 4 apples or 3 apples?)

b. What fraction of the candies did the two girls eat? _____ of the candies
(Think of the apples again.)

c. What fraction of the candies are left? _____ of the candies
(Apples!)

Explanation:

Consider this question: What is $\frac{1}{4}$ of \$28?

You know that if something is separated into 4 equal parts, then each part is $\frac{1}{4}$ of the thing. You also know that separating a quantity into some number of equal parts is a division process.

So we see that to find $\frac{1}{4}$ of \$28, we simply divide \$28 by 4:

$$\$28 \div 4 \text{ equal parts} = \$7 \text{ per part}$$

Similarly, we find $\frac{1}{6}$ of 42 chairs by dividing.

$$42 \text{ chairs} \div 6 \text{ equal parts} = 7 \text{ chairs per part}$$

Also, we know that $\frac{1}{9}$ of 36 inches is 4 inches:

$$36 \text{ inches} \div 9 \text{ equal parts} = 4 \text{ inches per part}$$

42. There are 35 students in Miss Jane's P.E. class.

a. $\frac{1}{5}$ of the class is how many students? _____

b. $\frac{2}{5}$ of the class is how many students? _____

c. Write a number to complete this sentence: $\frac{4}{5}$ of 35 students is _____ students.

Explanation:

Reading each question aloud is essential to the reasoning process which leads to the answers for parts b. and c.

If 1 fifth of the students is 7 students,
then 2 fifths of the students is 14 students,
and 3 fifths of the students is 21 students,
etc.

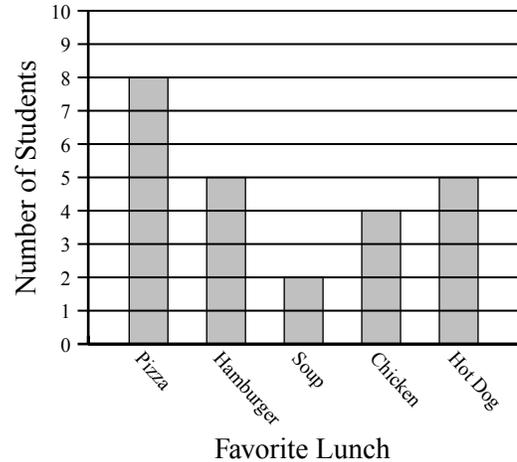
47. a. How many students are in Mrs. Stein's class?

b. Which lunch is the favorite of $\frac{1}{3}$ of the class? _____

c. What fraction of the class said that hamburger is their favorite lunch?

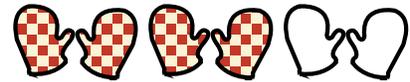
d. What fraction of the class named either chicken or soup as their favorite? _____

Survey of Mrs. Stein's Class



58. a. If I think of each mitten as an equal part of the

set, then I would say that _____ out of _____ equal parts of the set are checkered.



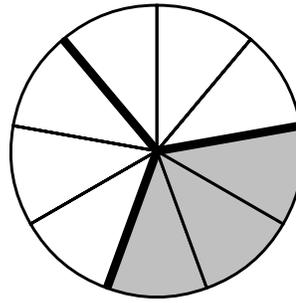
From this point of view, what fraction of the set is checkered? _____ of the set

b. If I think of each pair of mittens as an equal part of the set, then I would say that _____ out of _____ equal parts are checkered.

From this point of view, what fraction of the set is checkered? _____ of the set

c. True or False: $\frac{4}{6}$ of this set of mittens = $\frac{2}{3}$ of this set of mittens _____

61. Write two different fractions to represent the grey portion of this circle.



_____ ; _____

70. For lunch today, students could choose a hamburger, fried chicken, or macaroni and cheese.

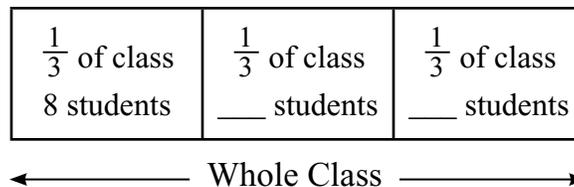
Two-fifths of the students chose fried chicken, and two-sevenths of the students chose macaroni and cheese.

a. Which lunch was more popular—fried chicken or macaroni and cheese?

b. Explain how you got your answer.

87. Eight students out of Mrs. Brown's class are on the Honor Roll. This is $\frac{1}{3}$ of the whole class. How many students are in the whole class? _____

Hints: i. Fill in the missing numbers in this picture.



or

ii. Think this way:

1 third of the class is 8 students.

So 2 thirds of the class is ___?___ students.

And 3 thirds of the class is ___?___ students.