

5.1 RATIOS

ESSENTIAL QUESTION: How can you represent a relationship between 2 quantities

A ratio is a comparison of 2 quantities. It says how much of one thing there is compared to another thing.

Ratios can be part-to-part, part-to-whole, or whole-to-part.

1) What is the ratio of red crayons to blue crayons? 2 to 6 or 2:6

This ratio means that for every 2 red crayons there are 6 blue crayons

This is a part-to-part ratio. (compares one part to another part)

2) What is the ratio of blue crayons to the total number of crayons? 6:8 or 6 to 8

This ratio means that 6 out of 8 crayons are blue.

This is a part-to-whole ratio. (compares one part to entire amount)

3) What is the ratio of the total number of crayons to red crayons 8:2 or 8 to 2

This ratio means that out of 8 crayons, 2 are red.

This is a whole-to-part ratio. (compares the entire amount to a part)

EXAMPLE 1 WRITING RATIOS

1) Write the ratio of pennies to quarters. 6 to 1

2) Write the ratio of quarters to dimes. 1 to 3

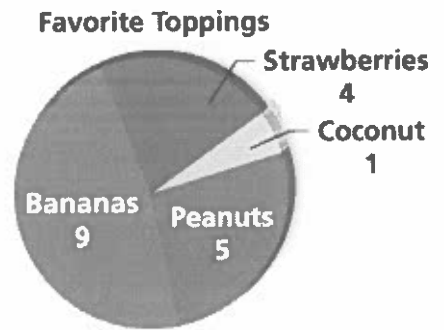
3) Write the ratio of dimes to the total number of coins. 3 to 16

4) Write the ratio of dimes to pennies. 3 to 6



The circle graph shows the favorite ice-cream toppings of several students. Use ratio language to compare the number of students who favor peanuts to the total number of students.

5 to 19
5 out of 19 students favor peanuts



EXAMPLE 2 USING A TAPE DIAGRAM

1) The ratio of your monthly allowance to your friend's monthly allowance is 5 : 3. The monthly allowance total \$40. How much is each allowance?

You

5	5	5	5	5
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Your friend

5	5	5
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Your allowance is \$25 and your friend's allowance is \$15. These 8 parts represent \$40. To find out how much each part is divide $40 \div 8$.

2) The ratio of small dogs to large dogs at the dog show is 4 : 3. If there are 56 dogs in the show, how many are large dogs?

Small dogs

8	8	8	8
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Large dogs

8	8	8
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$56 \div 7 = 8$
Each part equals 8

There are 24 large dogs.

3) The ratio of red pens to blue pens in a package is 2 : 6. If there are 72 pens in the package, how many red pens are in the package?

Red pens

9	9
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Blue pens

9	9	9	9	9	9
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$72 \div 8 = 9$
Each part = 9

There are 18 red pens.

3) You separate 42 bulbs of garlic into two groups: one for planting and one for cooking. You will plant 3 bulbs for every 4 bulbs that you will use for cooking. Each bulb has about 8 cloves. About how many cloves will you plant?

Planting

6	6	6
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Cooking

6	6	6	6
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$42 \div 7 = 6$
Each part = 6

$3 \cdot 6 = 18$
 $18 \cdot 8 = 144$

You will plant about 144 cloves.

