



Helping With Math

Understanding Ratio between Two Quantities



GRADE 6



In mathematics, a ratio indicates how many times one number contains another. In other term, it simply shows the relative sizes of two or more values.



In a real estate firm, 50 of the employees are men and 20 of the employees are women. What is the ratio of men to women?



50 : 20



Understanding Ratio between Two Quantities



DEFINITION



- It says how much of one thing there is compared to another thing
- It is a comparison of two similar quantities obtained by dividing one quantity by the other

REMEMBER!

We use the word "to"--we say "the ratio of something to something else." Ratios can be written in several different ways: as a fraction, using the word "to", or with a colon.

ILLUSTRATIVE EXAMPLE:



Three squares and six circles.

Thus,

- The ratio of squares to circles is $\frac{3}{6}$
- The ratio of squares to circles is 3 to 6
- The ratio of squares to circles is 3:6



EQUAL RATIOS

There are still other ways to make the same comparison. That is by using equal ratios.

- To find an equal ratio, you can either multiply or divide each term in the ratio by the same number (but not zero).
 - For example, if we divide both terms in the ratio 3:6 by the number three, then we get the equal ratio, 1:2.
- To find out if two ratios are equal, you can divide the first number by the second for each ratio. If the quotients are equal, then the ratios are equal.
 - Is the ratio 3:12 equal to the ratio 36:72? Divide both, and you discover that the quotients are not equal. Therefore, these two ratios are not equal.

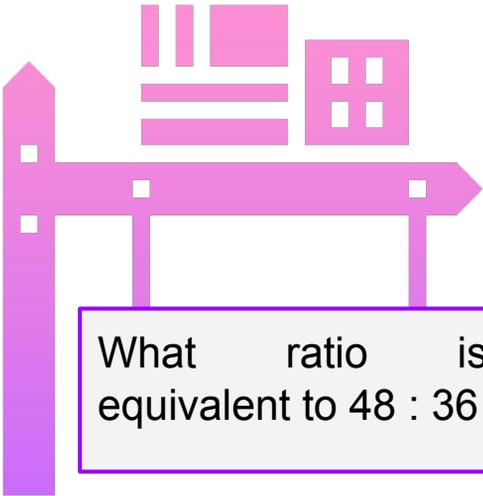
There are 32 salesmen and 56 saleswomen in the auditorium. What is the ratio of the saleswomen to the total sales employees?

- Based on the given, there are 32 salesmen and 56 saleswomen.
- Since the problem is asking the ratio of the saleswomen to the total employees, we first get the quantity of the saleswomen (56).
- Then add the salesmen and saleswomen to get the total sales employees.
- Therefore, the ratio is:

56:88



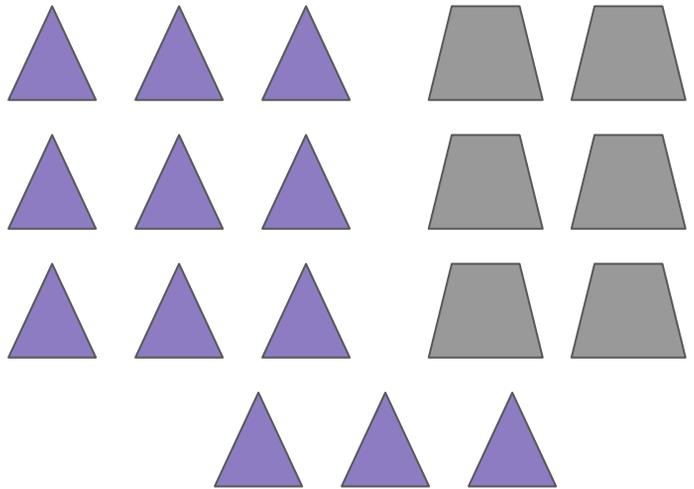
EXERCISES



Solution:



What is the ratio of the given on the right.



Write three equivalent ratios. Show your complete solution.



TABLE OF ACTIVITIES

1. House Plan
2. Price
3. Deal
4. Real Estate Ratio
5. Real Estate Agent
6. Key
7. Loan
8. Blueprint
9. Deposit
10. Contract



HOUSE PLAN

Make sure to plan your house right by distinguishing if the given is correct or not. Write APPROVE if the given is true. Otherwise, write DISAPPROVE.

- _____ 1. $24 : 6$ can be simplified to $4 : 2$.
- _____ 2. Ratio is a comparison between two quantities.
- _____ 3. $5 : 8 = 35 : 56$
- _____ 4. At summer camp, the ratio of boys to girls was 7 is to 4. If there were 91 boys, there is a total of 145 boys and girls at the camp.
- _____ 5. A farmer has 120 cows. If the ratio of cows to horses was 8 is to 3, the farmer has 45 horses.



PRICE

Determine the price of the house you are eyeing for by writing the equivalent ratio of the following.

1.



2 : 5 is equivalent to 14 : _____

2.

5 : 7 is equivalent to _____ : _____



3.



3 : _____ is equivalent to 6 : 10

4.

6 : 12 can be simplified to _____ : _____



DEAL

John and the real estate agent now made a deal! This deal is supported by determining the equivalent ratio of the given.

1.

$$1 : 3 = \underline{\quad} : 6 = \underline{\quad} : 9 = 4 : \underline{\quad} = \underline{\quad} : 15 = \underline{\quad} : 18$$

2.

$$1 : 2 = 2 : \underline{\quad} = \underline{\quad} : 6 = 4 : \underline{\quad} = \underline{\quad} : 10 = \underline{\quad} : 12$$

3.

$$5 : 9 = 10 : \underline{\quad} = 15 : \underline{\quad} = 20 : \underline{\quad} = 25 : \underline{\quad}$$

4.

$$2 : 5 = \underline{\quad} : 10 = \underline{\quad} : 15 = 8 : \underline{\quad} = \underline{\quad} : 25 = \underline{\quad} : 30$$

5.

$$1 : 8 = \underline{\quad} : 16 = \underline{\quad} : 24 = 4 : \underline{\quad} = \underline{\quad} : 40 = \underline{\quad} : 48$$



REAL ESTATE RATIO

Identify and determine the ratio of the following objects below.



1.

The ratio of  to  is



2.

The ratio of  to  is



3.

The ratio of  to  is



4.

The ratio of  to  is



REAL ESTATE AGENT

The company is hiring more agents! Apply for the position by determining what is asked in the following given.

1. Write the ratio as a fraction in simplest form: 15 boys to 6 girls. _____

2. Determine the ratio for burgers and nachos. There are 4 burgers and 33 nachos. _____

3. The pet shop has 2 dogs, 4 cats, and 5 rabbits. What is the ratio of dogs to all pets? _____

4. How do we write a ratio?



KEY

The Smith Family are getting their new home! Help them reach their new shelter and their key by answering the word problems below.



4. Callie drew 22 hearts and 76 circles. What is the ratio of circles to all shapes?



3. The ratio of girls to boys in a bowling club was 2 : 4. There were 14 girls. How many total members were there in the club?

2. Owen and Derek share a reward of \$140 in a ratio of 2:5. What fraction of the reward will Owen get?

1. A recipe calls for flour and sugar in the ratio of 2:3. If Teddy is using 6 cups of flour, how many cups of sugar should he use?



LOAN

Apply for a house loan by answering the following word problems.

LOAN

1. A pattern has 5 purple triangles to every 80 blue triangles. What is the ratio of purple triangles to all triangles?
2. A herd of 52 horses has 12 white and some black horses. What is the ratio of white to black horses?
3. The ratio of girls to boys is 25:40 . what is the ratio of boys to girls?
4. A company has 9 male and 21 female members. What is the ratio of male to female members in the company?

Answers:



BLUEPRINT

Plan your future house by answering the problems below.

1. Alex has 16 footballs, 12 tennis balls, and 10 basketballs. What is the ratio of tennis balls to basketballs?

2. Arizona has 4 white puppies, 6 brown puppies and 2 black puppies. What is the ratios of brown puppies to total puppies?

3. A baseball player has a ratio of 1 home run to 4 games. How many home runs will he hit during a 16-game season?

4. 4 out of every 5 people have brown eyes. How many people have brown eyes out of 125 people?

5. Cristina has 3 red squares for every 7 blue squares. If she has 16 more blue squares, how many are red?



DEPOSIT

Deposit your learning by making your own set of word problems. Make at least 3 and solve them.



ANSWER GUIDE

Activity 1

1. DISAPPROVE
2. APPROVE
3. APPROVE
4. DISAPPROVE
5. APPROVE

Activity 2

- | | |
|----------------------------|--------|
| 1. 35 | 3. 5 |
| 2. 15:21 (possible answer) | 4. 1:2 |

Activity 3

- | | |
|----------------|-----------------|
| 1. 2,3,12,5,6 | 4. 4,6,20,10,12 |
| 2. 4,3,8,5,6 | 5. 2,3,32,5,6 |
| 3. 18,27,36,45 | |

Activity 4

- | | |
|--------|--------|
| 1. 4:3 | 3. 1:4 |
| 2. 1:6 | 4. 3:1 |

Activity 5

- | | |
|------------------|---|
| 1. $\frac{5}{2}$ | 3. 2:11 |
| 2. 4:33 | 4. Through the use of colon, the word "to" or fraction. |



ANSWER GUIDE

Activity 6

- | | |
|------------------|----------|
| 1. 9 | 3. 42 |
| 2. $\frac{2}{7}$ | 4. 38:39 |

Activity 7

- | | |
|---------|----------|
| 1. 1:17 | 3. 40:25 |
| 2. 3:10 | 4. 3:7 |

Activity 8

- | | |
|--------|--------|
| 1. 6:5 | 4. 100 |
| 2. 1:2 | 5. 12 |
| 3. 4 | |

Activity 9

Answers may vary.

Activity 10

Answers may vary.



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