

Basic Math
Word Problems
Worksheet 15
Word Problems
with
Ratios and Proportions

Basic Math – Word Problems - Worksheet 15: Word Problems with Ratios and Proportions

Problem 1) Two numbers are at a ratio of 5: 9. Find the larger number if the smaller number is 35.

Problem 2) The sum of two numbers is 52. Find the larger number if their ratio is 1: 3.

Problem 3) Three numbers have a ratio of 2: 3: 4. Find the largest number if their sum is 36.

Problem 4) The ages of two people add up to 25 and their ratio is 2: 3. What is the age of the younger person?

Problem 5) Two numbers have a ratio of 5: 8. What is the larger number if the smaller number is 75.

Problem 6) Jason weighs 56.7 kg. He has a goal of reducing his weight so that the ratio of his present weight to his new weight is 7: 6. Find his new weight.

Problem 7) The ages of a husband and a wife are in a ratio of 14: 12, respectively. How old is the husband if the wife is 36 years old?

Problem 8) Three numbers are in the ratio of 5: 6: 7. What is the smallest number if the sum of the three numbers is 72?

Problem 9) The ratio of two numbers is 7: 12. What is the larger number if the smaller number is 84?

Problem 10) The ratio of the heights, in cm, of two dogs is 4: 9. What is the height of the smaller dog if the larger dog is 36 cm tall?

Answers - Basic Math – Word Problems - Worksheet 15: Word Problems with Ratios and Proportions

Problem 1) Two numbers are at a ratio of 5: 9. Find the larger number if the smaller number is 35.

Solution:

The information given allows us to write and solve a proportion:

$$\frac{5}{9} = \frac{35}{x}$$

Cross multiply:

$$5x = 9(35)$$

$$5x = 315$$

$$x = 63$$

Answer: 63

Problem 2) The sum of two numbers is 52. Find the larger number if their ratio is 1: 3.

Solution:

Insert a variable x into the ratio and write an equation of their sum:

$$1x + 3x; 1x + 3x = 52$$

$$4x = 52; x = 13$$

$$3x = 3(13) = 39$$

Answer: 39

Problem 3) Three numbers have a ratio of 2: 3: 4. Find the largest number if their sum is 36.

Solution:

Insert a variable x into the proportion and write an equation for their sum:

$$2x: 3x: 4x; 2x + 3x + 4x = 36$$

$$9x = 36; x = 4$$

$$4x = 4(4) = 16$$

Answer: 16

Problem 4) The ages of two people add up to 25 and their ratio is 2: 3. What is the age of the younger person?

Solution:

Insert a variable x into the ratio and write an equation for their sum:

$$2x: 3x; 2x + 3x = 25$$

$$5x = 25; x = 5$$

$$2x = 2(5) = 10$$

Answer: 10 yrs old

Problem 5) Two numbers have a ratio of 5: 8. What is the larger number if the smaller number is 75.

Solution:

The information given allows us to write and solve a proportion:

$$\frac{5}{8} = \frac{75}{x}$$

Cross multiply:

$$5x = 8(75)$$

$$5x = 600; x = 120$$

Answer: 120

Problem 6) Jason weighs 56.7 kg. He has a goal of reducing his weight so that the ratio of his present weight to his new weight is 7: 6. Find his new weight, in kg.

Solution:

Write and solve a proportion:

$$\frac{56.7}{x} = \frac{7}{6}$$

Cross multiply:

$$56.7(6) = 7x$$

$$340.2 = 7x; x = 48.6$$

Answer: 48.6 kg

Problem 7) The ages of a husband and a wife are in a ratio of 14: 12, respectively. How old is the husband if the wife is 36 years old?

Solution:

Write and solve a proportion:

$$\frac{14}{12} = \frac{x}{36}$$

Cross multiply:

$$14(36) = 12x$$

$$504 = 12x$$

$$x = 42$$

Answer: 42 yrs old

Problem 8) Three numbers are in the ratio of 5: 6: 7. What is the smallest number if the sum of the three numbers is 72?

Solution:

Insert a variable x into the ratio and write an equation for the sum:

$$5x: 6x: 7x; \quad 5x + 6x + 7x = 72$$

$$18x = 72; \quad x = 4$$

$$5x = 5(4) = 20$$

Answer: 20

Problem 9) The ratio of two numbers is 7: 12. What is the larger number if the smaller number is 84?

Solution:

Write and solve a proportion:

$$\frac{7}{12} = \frac{84}{x}$$

Cross multiply:

$$7x = 12(84)$$

$$7x = 1008$$

$$x = 144$$

Answer: 144

Problem 10) The ratio of the heights, in cm, of two dogs is 4: 9. What is the height, in cm, of the smaller dog if the larger dog is 36 cm tall?

Solution:

Write and solve a proportion:

$$\frac{4}{9} = \frac{x}{36}$$

Cross multiply:

$$4(36) = 9x$$

$$144 = 9x; x = 16$$

Answer: 16 cm
