

Each problem must to be set up this way:

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|---|-------------------------------------|
| 1. Write the proportion. | $\frac{8}{3} = \frac{192}{n}$ |
| 2. Write the cross products | $8 * n = 192 * 3$ |
| 3. Multiply | $8n = 576$ |
| 4. Undo multiplication by using
division | $8n = 576$
$\div 8 \quad \div 8$ |
| 5. Divide | $n = 72$ |

Solve each proportion. Be sure to set it up the correct way and show all work.

$$1. \frac{4}{9} = \frac{10}{x}$$

$$2. \frac{5}{2} = \frac{6}{x}$$

$$3. \frac{5}{2} = \frac{2}{x}$$

$$4. \frac{21}{27} = \frac{x}{18}$$

$$5. \frac{15}{21} = \frac{20}{y}$$

$$6. \frac{26}{b} = \frac{39}{9}$$

$$7. \frac{h}{108} = \frac{7}{18}$$

$$8. \frac{45}{792} = \frac{70}{w}$$

$$9. \frac{16}{120} = \frac{j}{15}$$

$$10. \frac{350}{p} = \frac{1050}{60}$$

$$11. \frac{g}{1134} = \frac{27}{729}$$

$$12. \frac{40}{65} = \frac{z}{104}$$

$$13. \frac{15}{y} = \frac{40}{12}$$

$$14. \frac{y}{32} = \frac{16}{10}$$

$$15. \frac{32.5}{25} = \frac{97.5}{q}$$

$$16. \frac{y}{42.3} = \frac{144}{56.4}$$

$$17. \frac{126}{k} = \frac{14}{3}$$

$$18. \frac{30}{x} = \frac{16}{40}$$

19-22. For each word problem, write and then solve the proportion to find the answer. Be sure to set it up the correct way and show all work.

19. A 380-cubic-centimeter sample of titanium has a mass of 1710 grams. Find the weight of a titanium sample that has a volume of 532 cubic centimeters. Write and then solve a proportion to find the answer.

20. The Bigtown football team outscored its opponents 5:2 last season. If their opponents scored 38 points, how many points did Bigtown score?

21. In the local coed softball league, the male to female ratio is 6:5. If there are 165 players in the league, how many are female?

22. In a certain desert environment there are a lot of small rodents. There also happen to be a lot of snakes that feed on the rodents. The ratio of rodents to rodent eating snakes is 13 to 3. If there are 4,000 snakes in the area, about how many rodents are there?

Set up complete solutions for the following ratio and proportion questions. Some are easy, but some are more difficult!

1. On a tour guide map of Madagascar, the scale states that 3 inches represent 125 miles. Two beaches are 5.2 inches apart on the map. What is the approximate distance in miles between the two beaches? Round your answer to the nearest tenth.
2. A ornithologist is studying hawks in the Adirondack Mountains. She catches 24 hawks over a period of one month, tags them, and frees them back into the wild. The next month, she catches 20 hawks and finds that 12 are already tagged. Estimate the number of hawks in this part of the mountains.
3. You have a friend who weighs 155 pounds but is only 5 feet 4 inches tall. What is the height-to-weight ratio of your pal?
4. I own a cleaning company and am having trouble figuring cost per square foot. If I clean a 3200 square foot building five nights per week for a sum of \$575.00 per month, what is the cost per square foot?
5. A common foodstuff is found to contain .00125% iron. The serving size is 87.0 grams. If the recommended daily allowance is 18mg of iron, how many servings would a person have to eat to get 100% of the daily allowance of iron?
6. If a doctor prescribes 30 units of insulin in 500 ml to be administered over 2 hours, how many drops per minute should be administered if the set is calibrated to deliver 20 drops per ml?