Def. ratio

A comparison of 2 or more quantities.

Can be written as a fraction

ex: $\dfrac{3}{4}$

or in the form

3:4

In 2002, the Chicago Cubs baseball team won 67 games out of 162. Write a ratio for the number of games won to the total number of games played.

A doll house that is 15 inches tall is a scale model of a real house with a height of 20 feet. What is the ratio of the height of the doll house to the height of the real house?

In the 2005 Major League baseball season, Alex Rodriquez hit 48 home runs and was at bat 605 times. Find the ratio o home runs to the number of times he was at bat

There are 182 girls in the sophomore class of 305 students. Find the ratio of girls to total students

The length of a rectangle is 8 inches and its width is 5 inches. Find the ratio of length to width

Def. scale factor

another way of expressing a ratio (we'll look at another definition later)

The sides of a triangle are 3 inches, 4 inches, and 5 inches. Find the scale factor between the longest and the shortest sides.

The length of a model train is 18 inches. It is a scale model of a train that is 48 feet long. Find the scale factor.

Extended ratio

used to compare 3 or more numbers in the form *a:b:c*

Note: Extended ratio equations require a variable to be the common factor among the terms of the ratio. This will allow us to write an equation to answer the question...

Using extended ratios:

In a triangle, the ratio of the measures of three sides is 5:12:13, and the perimeter is 90 centimeters. Find the measure of the shortest side of the triangle.

In a triangle, the ratio of the measures of the three sides is 3:3:8, and its perimeter is 392 inches. Find the length of the longest side of the triangle.

The ratio of the measures of three angles of a triangle is 5:7:8. Find the measure of each angle of the triangle.

Def. Proportion

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2 equal ratios.

Do you recognize this one?

Write 2 more proportions:

$$\frac{\%}{100} = \frac{is}{of}$$

To solve any proportion,

cross multiply!!

If $\dfrac{a}{b} = \dfrac{c}{d}$ then $ad = bc$

7.1 - Ratio & Proportion

Try it: Find x.

$$\frac{x}{4} = \frac{11}{-6}$$

$$\frac{-4}{7} = \frac{6}{2x+5}$$

We can write proportions to model situations, and use the information given to answer the question posed:

If 3 cassettes cost $44.85, find the cost of 2 cassett

The scale on a map indicates that one inch equals 4 miles. If two towns are 3.5 inches apart on the map, what is the actual distance between the towns?

A boxcar on a train has a length of 40 feet and a width of 9 feet. A scale model is made with a length of 16 inches. Find the width of the model.