

# Ratio and Proportion

## Ratios

A ratio is a comparison of two or more quantities.

$a : b$

$a$  to  $b$

$\frac{a}{b}$

1. There are 75 girls in a junior class of 385 students. Find the ratio of boys to girls.
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
2. In a triangle, the ratio of the measures of three sides is 5:12:9, and its perimeter is 130 inches. Find the length of each side of the triangle.
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
3. The ratio of the measure of the angles of a triangle is 7:5:8. Find the measure of each angle.

4. The ratio of two complementary angles is  $\frac{1}{2} : \frac{2}{3}$ . Find the measure of each angle.

### Proportions

An equal sign in between two fractions is called a proportion.

$$\frac{a}{b} = \frac{c}{d}$$

To solve a proportion, cross-multiply.

$$a \cdot d = c \cdot b$$

Step 1: Use cross-multiplication to remove the fractions.

Step 2: Use algebra to solve for the variable.

Directions: Solve each proportion.

5.  $\frac{2}{5} = \frac{x}{75}$

6.  $-\frac{2y+3}{12} = \frac{5}{4}$

$$7. \quad \frac{x+1}{x-1} = \frac{6}{7}$$

$$8. \quad \frac{x-2}{2} = \frac{5}{x+1}$$