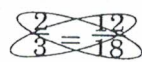


# Study Guide Worksheet 11.

## Proportions

A proportion is an equation that shows that two ratios are equivalent. The cross products of a proportion are equal.

**Example** Find the cross products.  $\frac{2}{3} = \frac{12}{18}$  

$$3 \times 12 = 36$$

$$2 \times 18 = 36$$

So,  $\frac{2}{3} = \frac{12}{18}$  is a proportion.

If one term of a proportion is not known, you can use cross products to find the term. This is called solving the proportion.

**Example** Solve  $\frac{r}{24} = \frac{7}{8}$ .

$$\frac{r}{24} = \frac{7}{8}$$

$$r \times 8 = 24 \times 7 \quad \text{Find the cross products.}$$

$$8r = 168$$

$$\frac{8r}{8} = \frac{168}{8} \quad \text{Divide each side by 8.}$$

$$r = 21$$

**Solve each proportion.**

1.  $\frac{2}{n} = \frac{5}{10}$

2.  $\frac{5}{8} = \frac{m}{24}$

3.  $\frac{12}{20} = \frac{k}{15}$

4.  $\frac{y}{7} = \frac{7}{49}$

5.  $\frac{21}{f} = \frac{9}{12}$

6.  $\frac{10}{12} = \frac{15}{v}$

7.  $\frac{3.5}{m} = \frac{16}{32}$

8.  $\frac{6}{20} = \frac{n}{50}$

9.  $\frac{75}{r} = \frac{6}{2}$

10.  $\frac{f}{0.8} = \frac{2}{8}$

11.  $\frac{15}{120} = \frac{t}{16}$

12.  $\frac{7}{9} = \frac{c}{36}$

# Practice Worksheet 11-3

## Proportions

Solve each proportion.

1.  $\frac{n}{8} = \frac{12}{16}$

2.  $\frac{3}{k} = \frac{5}{15}$

3.  $\frac{18}{30} = \frac{y}{4}$

4.  $\frac{2.8}{4} = \frac{7}{x}$

5.  $\frac{r}{5} = \frac{65}{75}$

6.  $\frac{18}{m} = \frac{3}{36}$

7.  $\frac{24}{13} = \frac{b}{26}$

8.  $\frac{300}{24} = \frac{18}{j}$

9.  $\frac{w}{5} = \frac{25}{1,000}$

10.  $\frac{0.24}{a} = \frac{3}{9.6}$

11.  $\frac{17}{8.5} = \frac{z}{0.01}$

12.  $\frac{8}{45} = \frac{80}{q}$

13.  $\frac{0.1}{8.2} = \frac{1.8}{a}$

14.  $\frac{4.2}{b} = \frac{8}{5}$

15.  $\frac{c}{5} = \frac{650}{6.5}$

16. Josh spends 40 cents out of every dollar on snacks, 14 cents out of every dollar on school supplies, and saves the rest. If Josh earns \$32.00 per week cutting lawns, how much does he save per week?