

NAME

Meg

DATE

SCORE

Practice 25

Ratio, Proportion, and Similarity

Lessons 7-1 through 7-3

Express each ratio in simplest form.

- $\frac{20}{45} = \frac{4}{9}$
- $\frac{2m}{7m} = \frac{2}{7}$
- $(x - 5):3(x - 5) = 1:3$

8 cm to 200 cm

- 8 cm to 2 m $\frac{1}{25}$
- $\frac{15n^2}{40n} = \frac{3n}{8}$
- $\frac{2(a+7)}{6a+42} = \frac{1}{3}$

Complete each statement.

- If $\frac{a}{6} = \frac{4}{7}$, then $7a = 24$
- If $\frac{b}{c} = \frac{d}{e}$, then $\frac{e}{d} = \frac{c}{b}$
- If $\frac{x}{7} = \frac{c}{9}$, then $\frac{x}{c} = \frac{7}{9}$
- If $5:x = 9:3$, then $9x = 15$
- If $\frac{a}{8} = \frac{b}{12}$, then $\frac{a+8}{8} = \frac{b+12}{12}$
- If $\frac{x}{5} = \frac{3}{4}$, then $\frac{x+3}{9} = \frac{x}{5}$ or $\frac{3}{4}$

Find the value of x .

- $\frac{x}{20} = \frac{3}{5}$, $x = 12$
- $\frac{x-2}{3} = \frac{1}{4}$, $x = \frac{11}{4}$
 $4(x-2) = 3$
 $4x - 8 = 3$
 $4x = 11$
- $\frac{4}{2x-5} = \frac{3}{x+7}$, $x = \frac{43}{2}$
 $4(x+7) = 3(2x-5)$
 $4x+28 = 6x-15$
 $43 = 2x$
- The measures of two supplementary angles are in the ratio 5:13.
Find the measure of each angle.
smaller angle 50 larger angle 130
 $5x + 13x = 180$
 $18x = 180$
 $x = 10$
- $\frac{7}{2} = \frac{3x}{5}$, $x = \frac{35}{6}$
 $35 = 6x$
- $\frac{x-4}{x+4} = \frac{1}{3}$, $x = 8$
 $3(x-4) = x+4$
 $3x-12 = x+4$
 $2x = 16$
- $\frac{x}{x-2} = \frac{x+5}{x}$, $x = \frac{10}{3}$
 $x^2 = (x-2)(x+5)$
 $x^2 = x^2 + 3x - 10$
 $0 = 3x - 10$
 $10 = 3x$

20. Quad $MNOP \sim$ quad $M'N'O'P'$.

- The scale factor of quad $MNOP$ to quad $M'N'O'P'$ is $\frac{15}{27} = \frac{5}{9}$
- The value of $x = 10$
 $\frac{2}{3} = \frac{x}{15}$
- The value of $y = 42$
 $\frac{2}{3} = \frac{28}{y}$
- The value of $z = 36$
 $\frac{2}{3} = \frac{24}{z}$

