

Review Exercise Set 13

Exercise 1: Solve for y.

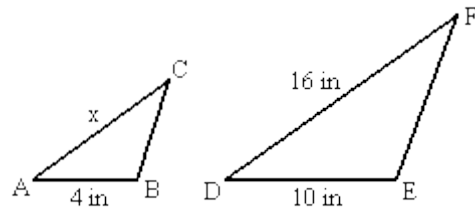
$$\frac{y}{6} = \frac{5}{3}$$

Exercise 2: Solve.

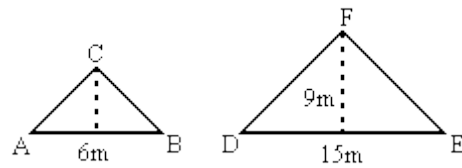
$$\frac{2}{x+1} = \frac{5}{x-3}$$

Exercise 3: If a car can travel 48 miles on a single gallon of gas, how many miles can the car travel on 7 gallons?

Exercise 4: The triangles ABC and DEF below are similar. Find the indicated side, AC. Round answers to the nearest tenth.



Exercise 5: The triangles ABC and DEF below are similar. Find the area of triangle ABC. Round answers to the nearest tenth.



Review Exercise Set 13 Answer Key

Exercise 1: Solve for y.

$$\begin{aligned}\frac{y}{6} &= \frac{5}{3} \\ y \times 3 &= 6 \times 5 \\ 3y &= 30 \\ 3y \div 3 &= 30 \div 3 \\ y &= 10\end{aligned}$$

Exercise 2: Solve.

$$\begin{aligned}\frac{2}{x+1} &= \frac{5}{x-3} \\ 2 \times (x-3) &= (x+1) \times 5 \\ 2x - 6 &= 5x + 5 \\ 2x - 2x - 6 &= 5x - 2x + 5 \\ -6 &= 3x + 5 \\ -6 - 5 &= 3x + 5 - 5 \\ -11 &= 3x \\ -11 \div 3 &= 3x \div 3 \\ -3\frac{2}{3} &= x\end{aligned}$$

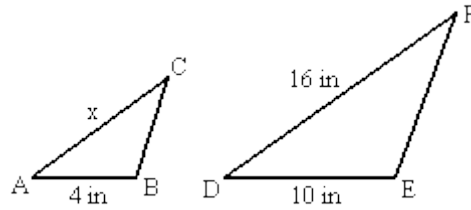
Exercise 3: If a car can travel 48 miles on a single gallon of gas, how many miles can the car travel on 7 gallons?

Let x = miles traveled on 7 gallons

$$\begin{aligned}\frac{48 \text{ miles}}{1 \text{ gallon}} &= \frac{x \text{ miles}}{7 \text{ gallons}} \\ 48 \times 7 &= 1 \times x \\ 336 &= x\end{aligned}$$

The car could travel 336 miles on 7 gallons of gas.

Exercise 4: The triangles ABC and DEF below are similar. Find the indicated side, AC. Round answers to the nearest tenth.



x = length of side AC

$$\frac{x}{16 \text{ in}} = \frac{4 \text{ in}}{10 \text{ in}}$$

$$x \times 10 = 16 \times 4$$

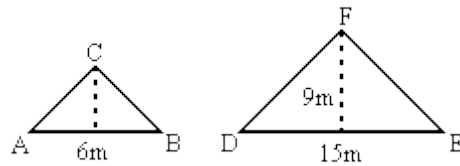
$$10x = 64$$

$$10x \div 10 = 64 \div 10$$

$$x = 6.4$$

The length of side AC is 6.4 inches.

Exercise 5: The triangles ABC and DEF below are similar. Find the area of triangle ABC. Round answers to the nearest tenth.



First, we need to find the height of triangle ABC.

$$\frac{x}{9 \text{ m}} = \frac{6 \text{ m}}{15 \text{ m}}$$

$$x \times 15 = 9 \times 6$$

$$15x = 54$$

$$15x \div 15 = 54 \div 15$$

$$x = 3.6$$

Example 5 (Continued):

Now, we can find the area of triangle ABC.

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(6\text{ m})(3.6\text{ m})$$

$$A = (3\text{ m})(3.6\text{ m})$$

$$A = 10.8\text{ m}^2$$

The area of triangle ABC is 10.8 square meters.