

2-5-19

Aim: SWBAT solve problems involving similar figures.

HW: Packet Pages 16 - 17

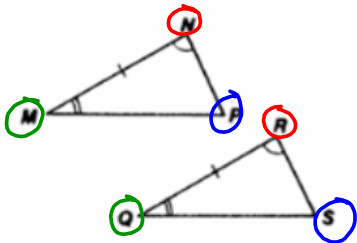
Quiz Friday

Do Now: Packet Page 15

HOMEWORK

List ALL corresponding parts.

1)



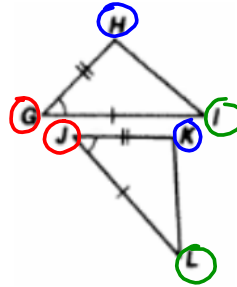
Corresponding Sides

 \overline{MN} and \overline{QR} \overline{NP} and \overline{RS} \overline{MP} and \overline{QS}

Corresponding Angles

 $\angle N$ and $\angle R$ $\angle M$ and $\angle Q$ $\angle P$ and $\angle S$

2)



Corresponding Sides

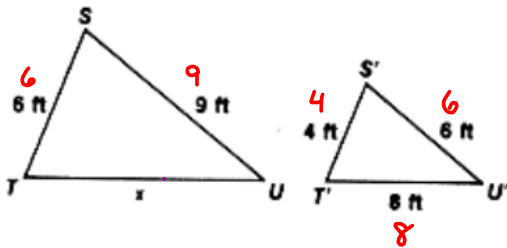
 \overline{GH} and \overline{JK} \overline{HI} and \overline{KL} \overline{GI} and \overline{JL}

Corresponding Angles

 $\angle H$ and $\angle K$ $\angle G$ and $\angle J$ $\angle I$ and $\angle L$

Each of the following pairs of triangles is similar. Find the missing side(s) algebraically using a proportion.

3) Solve for x

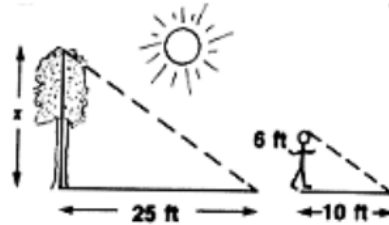


$$\frac{x}{8} = \frac{6}{4}$$

$$\frac{4x}{4} = \frac{48}{4}$$

$$x = 12$$

4) Solve for x



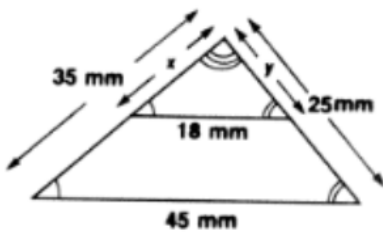
$$\frac{x}{6} = \frac{25}{10}$$

$$\frac{10x}{10} = \frac{150}{10}$$

$$x = 15$$

For #'s 5 and 6 you will need to write two proportions. (Use a proportion to solve for x first, then write another proportion to solve for y.)

5) Solve for x and y



$$\frac{x}{35} = \frac{18}{45}$$

$$\frac{45x}{45} = \frac{810}{45}$$

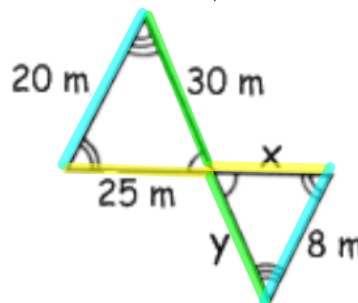
$$x = 18$$

$$\frac{y}{25} = \frac{18}{45}$$

$$\frac{45y}{45} = \frac{450}{45}$$

$$y = 10$$

6) Solve for x and y



$$\frac{x}{25} = \frac{8}{20}$$

$$\frac{20x}{20} = \frac{200}{20}$$

$$x = 10$$

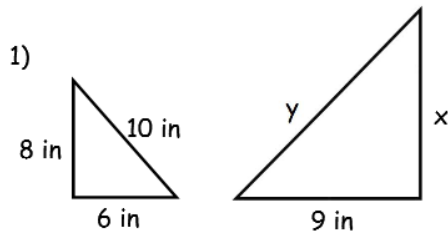
$$\frac{y}{30} = \frac{8}{20}$$

$$\frac{20y}{20} = \frac{240}{20}$$

$$y = 12$$

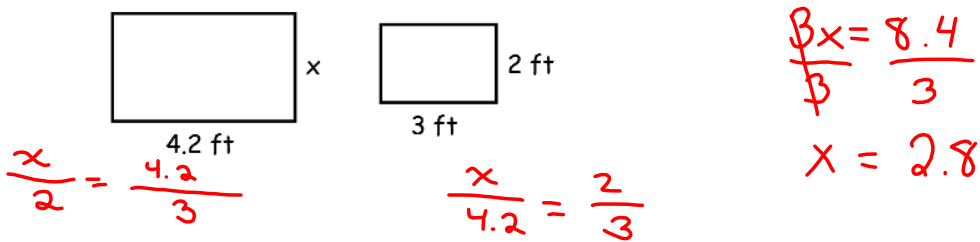
Aim: SWBAT solve problems involving similar figures.

Do Now: The following pair of triangles is similar. Find the missing sides.

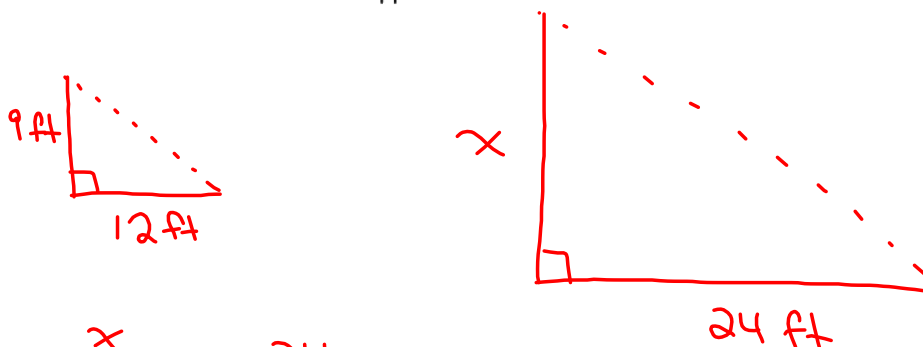


Solve algebraically. Draw a picture for #'s 2, 3 & 4.

- 1) The two rectangular picture frames are similar. What is the height of the larger picture frame?



- 2) A 9-foot tall street sign casts a 12 foot shadow. The lamppost next to it casts a 24 foot shadow. How tall is the lamppost? **Draw a Picture.**



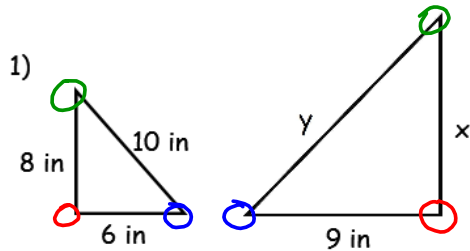
$$\frac{x}{9} = \frac{24}{12}$$

$$\frac{12x}{12} = \frac{216}{12}$$

$$x = 18$$

Aim: SWBAT solve problems involving similar figures.

Do Now: The following pair of triangles is similar. Find the missing sides. (Solve for x AND y)



$$\frac{x}{8} = \frac{9}{6}$$

$$\frac{y}{10} = \frac{9}{6}$$

$$\frac{6x}{6} = \frac{72}{6}$$

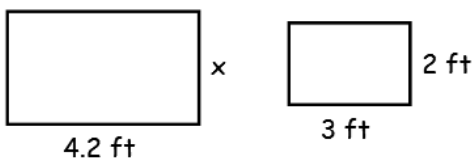
$$x = 12$$

$$\frac{6y}{6} = \frac{90}{6}$$

$$y = 15$$

Solve Algebraically. (This means . . . set up and solve a proportion.) For #'s 2, 3 & 4 you must also draw a picture.

- 1) The two rectangular picture frames are similar. What is the height of the larger picture frame?

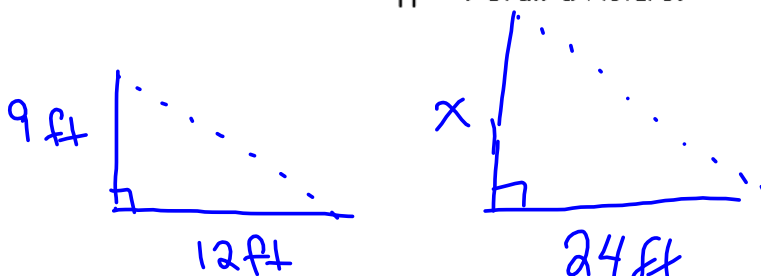


$$\frac{x}{2} = \frac{4.2}{3}$$

$$\frac{3x}{3} = \frac{8.4}{3}$$

$$x = 2.8 \text{ ft}$$

- 2) A 9-foot tall street sign casts a 12 foot shadow. The lamppost next to it casts a 24 foot shadow. How tall is the lamppost? *Draw a Picture.*

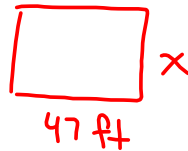
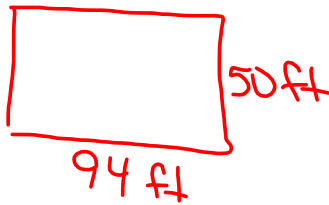


$$\frac{9}{x} = \frac{12}{24} \quad 54$$

$$\frac{12x}{12} = \frac{216}{12}$$

$$x = 18$$

- 3) The official size of a basketball court in the NBA is 94 feet by 50 feet. The basketball court in the school gym is 47 feet long. How wide must it be to be similar to the NBA court? *Draw a Picture.*



$$\frac{x}{50} = \frac{47}{94}$$

$$\frac{94x}{94} = \frac{2350}{94}$$

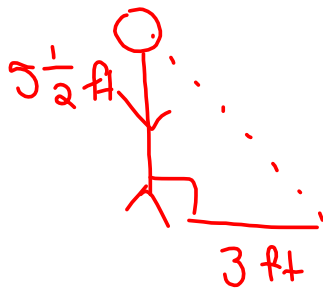
$$x = 25$$

$$5\frac{1}{2}$$

$$5.5 \text{ ft}$$

- 4) Mrs. Smith is 5 feet 6 inches tall. She notices that her shadow is 3 feet long and the shadow of a nearby water tower is 75 feet long. How tall is the water tower?

Draw a Picture.



$$\frac{x}{5\frac{1}{2} \text{ ft}} = \frac{75 \text{ ft}}{3 \text{ ft}}$$

$$\frac{3x}{3} = \frac{412.5}{3}$$

$$x = 137.5$$

HOMework

Solve algebraically. (This means . . . draw a picture, set up and solve a proportion, and state your final answer in a sentence.)

- 1) A vertical yardstick casts a shadow $2\frac{1}{2}$ feet long. At the same time, a pole casts a shadow 15 feet long. Find the height of the pole.

- 2) A 10-foot ladder touches the side of a building at a point that is 8 feet above the ground. At what height would a 7-foot ladder touch the building if it makes the same angle with the ground as the longer ladder?
- 3) A tree casts a shadow 40 feet long. At the same time, a boy 5'6" tall casts a shadow 8 feet long. Find the height of the tree.
- 4) On a map, the length from Cleveland to New York is 6 cm, from Cleveland to Atlanta is 8.5 cm, and from New York to Atlanta is 11 cm. If on a larger map, the length from Cleveland to New York is 9 cm, what is the distance from New York to Atlanta on the larger map?
- 5) David Goodwin is 5 ft. 9 in. tall. He notices that his shadow is 4 ft long and the shadow of a nearby water tower is 100 feet long. What is the height of the water tower?