

2-6-19

Aim: SWBAT solve problems involving similar figures.

HW: Packet Pages 16 - 17

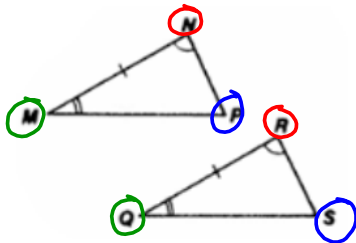
Quiz Friday ???

Do Now: Packet Page 15

HOMEWORK

List ALL corresponding parts.

1)



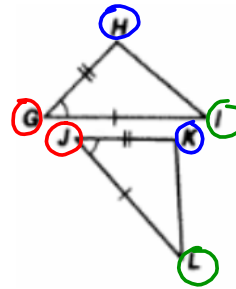
Corresponding Sides

 \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

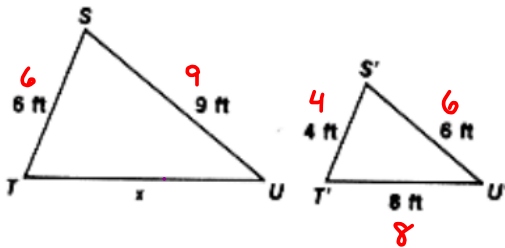
 \overline{GH} and \overline{JK} \overline{HI} and \overline{KL} \overline{GI} and \overline{JL}

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

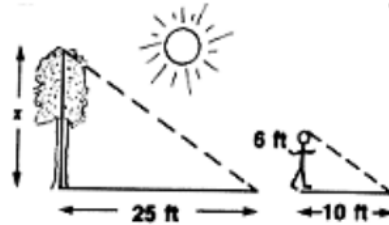


$$\frac{x}{8} = \frac{6}{4}$$

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

$$x = 12$$

4) Solve for x



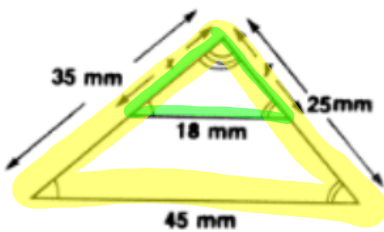
$$\frac{x}{6} = \frac{25}{10}$$

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

$$x = 15$$

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



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

$$\frac{45x}{45} = \frac{630}{45}$$

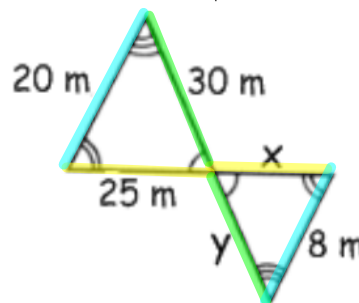
$$x = 14$$

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

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

$$y = 10$$

6) Solve for x and y



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

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

$$x = 10$$

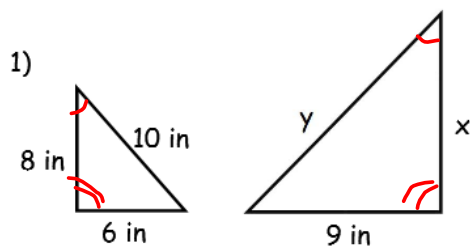
$$\frac{y}{30} = \frac{8}{20}$$

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

$$y = 12$$

Aim: SWBAT solve problems involving similar figures.

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



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

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

$$x = 12$$

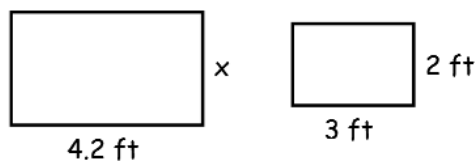
$$\frac{10}{6} = \frac{y}{9}$$

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

$$y = 15$$

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?



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

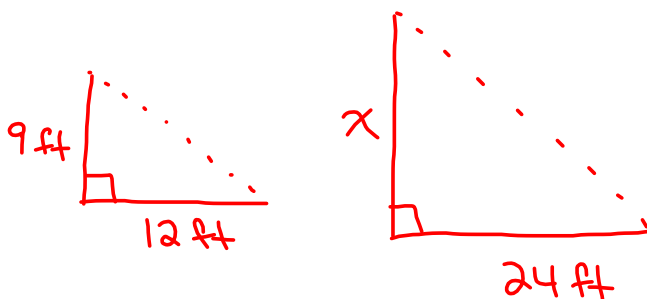
$$\frac{x}{2} = \frac{4.2}{3}$$

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

$$x = 2.8$$

- 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.**

let x = the height of the lamppost.



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

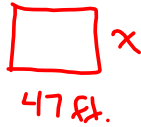
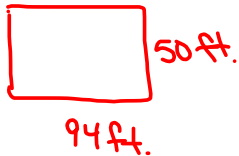
$$\frac{12x}{12} = \frac{216}{12}$$

$$x = 18$$

The lamppost is 18 ft. tall.

- 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.**

let x = the width of the school gym



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

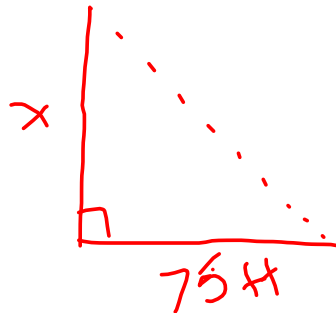
$$\frac{94x}{94} = \frac{2350}{94}$$

$$x = 25$$

The school gym is 25 ft. wide.

$$5\frac{6}{12} = 5\frac{1}{2}$$

- 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.**



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

$$3x = 412.5$$

HOMWORK

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?