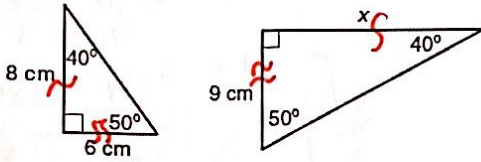


**Day 3 – Solving Similarity Problems using Proportions – Practice**

1. Given each pair of similar figures, determine the length of the unknown side, x.

A.

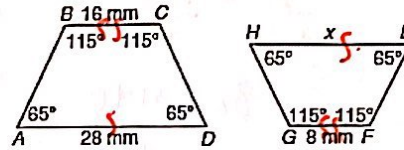


$$\frac{8}{x} = \frac{6}{9}$$

$$6x = 72$$

$$x = 12 \text{ cm}$$

B.



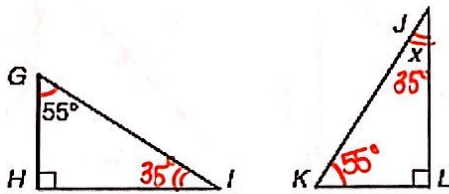
$$\frac{28}{x} = \frac{16}{8}$$

$$16x = 224$$

$$x = 14 \text{ mm}$$

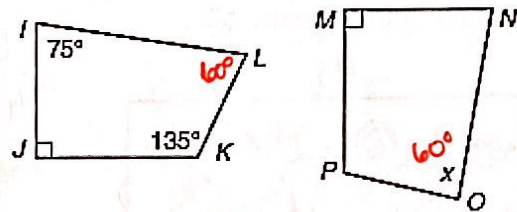
2. Given each pair of similar figures, determine the measure of the known angle, x.

A.



$$x = 35^\circ$$

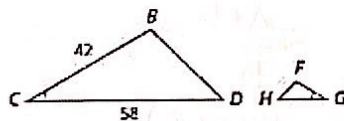
B.



$$x = 60^\circ$$

3. Which dimensions guarantee that  $\triangle BCD \sim \triangle FGH$ ?

- A.  $FG = 11.6, GH = 8.4$
- B.  $FG = 12, GH = 14$
- C.  $FG = 11.4, GH = 11.4$
- D.  $FG = 10.5, GH = 14.5$**

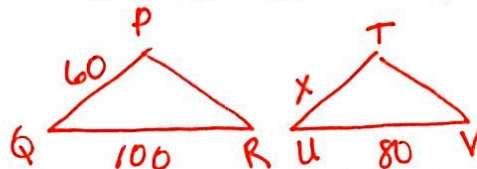
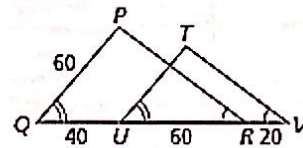


$$\frac{42}{10.5} = \frac{58}{14.5}$$

Substitute each of the options in until the ratios are equal

$$4 = 4$$

4. What is the length of TU?



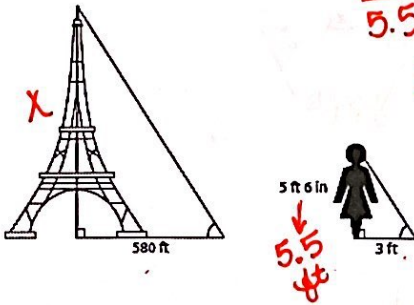
$$\frac{60}{x} = \frac{100}{80}$$

$$100x = 4800$$

$$x = 48$$

$$TU = 48$$

5. Sheila is standing near the Eiffel Tower in Paris, France. The shadow of the monument is 580 feet long, and Sheila's shadow is 3 feet long. If Sheila is 5 feet 6 inches tall, how tall is the monument.



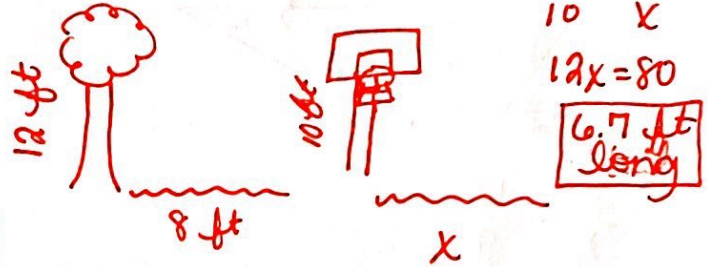
$$\frac{x}{5.5} = \frac{580}{3}$$

$$3x = 3190$$

$$x = 1063.3$$

The monument is 1063.3 ft tall.

6. At a certain time of day, a tree that is 12 feet tall casts a shadow that is 8 feet long. Find the length of the shadow that is created by a 10 feet tall basketball hoop at the same time of the day.

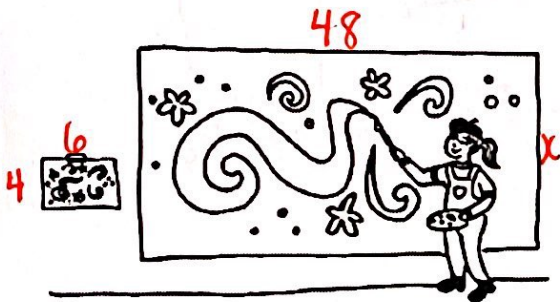


$$\frac{12}{10} = \frac{8}{x}$$

$$12x = 80$$

6.7 ft shadow

7. A wall mural is being painted from a picture that is 6 inches long and 4 inches wide. The wall mural should be 48 inches long. The picture and wall mural are similar. How wide is the width of the mural? What is the scale factor of the picture to the mural?



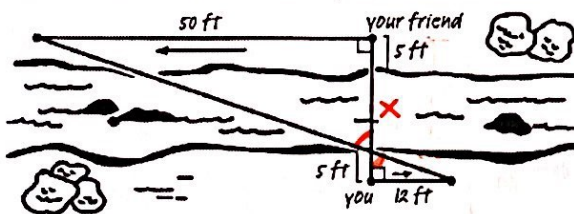
$$\frac{6}{48} = \frac{4}{x}$$

$$6x = 192$$

$$x = 32 \text{ inches}$$

The width is 32 inches. The scale factor is 8.

8. You and your friend are on opposite sides of the creek and are 5 feet from the creek bank. She walks 50 feet to the left on one side and you walk 12 feet to the right. Are the triangles similar? Find the width of the creek.



They are similar by AA (the right angles & vertical angles)

$$\frac{50}{12} = \frac{x+5}{5}$$

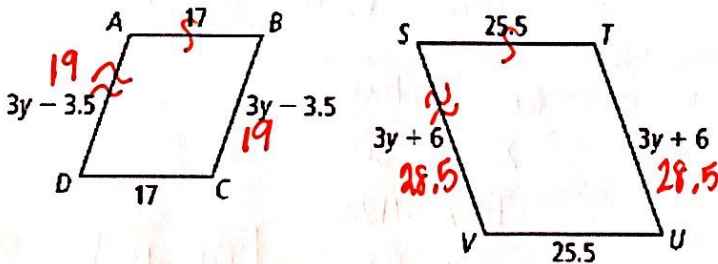
$$850 = 12(x+5)$$

$$850 = 12x + 60$$

$$190 = 12x$$

x = 15.83 ft wide

9. The following figures are similar (ABCD ~ TSVU). Solve for y and determine the scale factor. from ABCD to TSVU



$$\frac{17}{25.5} = \frac{3y-3.5}{3y+6}$$

$$17(3y+6) = 25.5(3y-3.5)$$

$$51y + 102 = 76.5y - 89.25$$

$$191.25 = 25.5y$$

$$7.5 = y$$

Enlargement

$$\frac{25.5}{17} = 1.5$$

K = 1.5