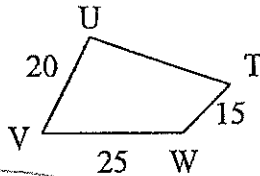
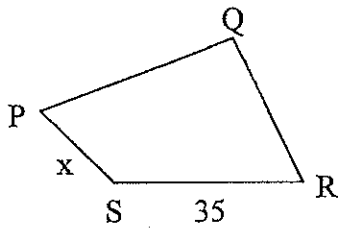


Similar Figures

Given two figures are similar, corresponding sides must be in proportion. Therefore, we can write a proportion to find the missing side length of one of the figures.

1. Given quadrilateral $\overline{PQRS} \sim \overline{TUVW}$, write a proportion to find the length of \overline{PS} .



$\overline{PS} = 21$

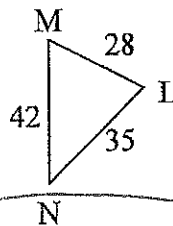
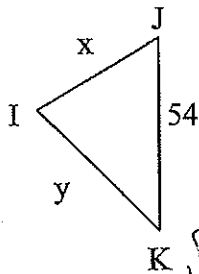
$$\frac{PS}{TW} = \frac{SR}{VW}$$

$$\frac{x}{15} = \frac{35}{25}$$

$$525 = 25x$$

$$x = 21$$

2. Given $\triangle IJK \sim \triangle LMN$, Find the length of \overline{IJ} and then the length of \overline{IK} .



$\overline{IJ} = 36, \overline{IK} = 45$

$$\frac{IJ}{LM} = \frac{JK}{MN}$$

$$\frac{x}{28} = \frac{54}{42} \Rightarrow 42x = 1512$$

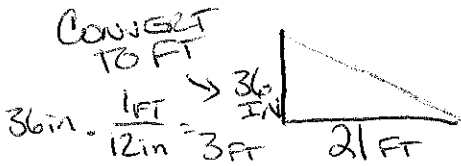
$$x = 36$$

$$\frac{IK}{LN} = \frac{JK}{MN}$$

$$\frac{y}{35} = \frac{54}{42} \Rightarrow 42y = 1890$$

$$y = 45$$

3. If a 36-inch yardstick casts a 21-foot shadow, how tall is a building whose shadow is 168 feet? (Draw a picture with two similar polygons.)

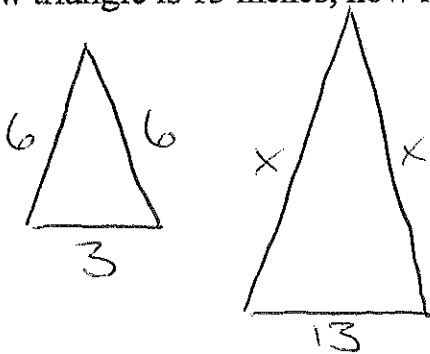


$$\frac{3 \text{ FT}}{X \text{ FT}} = \frac{21 \text{ FT}}{168 \text{ FT}}$$

$$21x = 504$$

$X = 24 \text{ FT}$

4. Sam wants to enlarge a triangle with sides 3, 6 and 6 inches. If the shortest side of the new triangle is 13 inches, how long will the other two sides be?



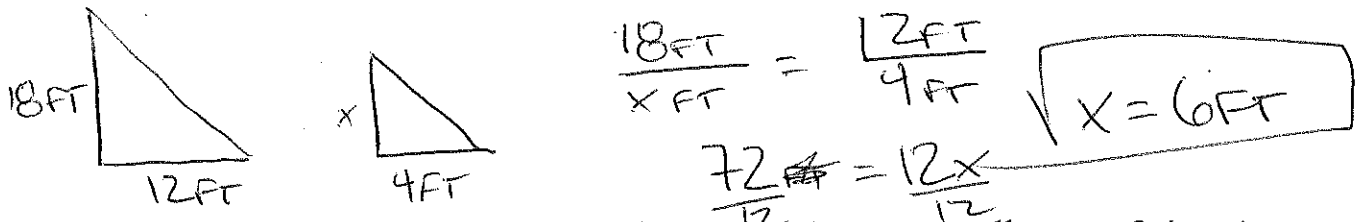
$$\frac{3 \text{ in}}{13 \text{ in}} = \frac{6 \text{ in}}{x \text{ in}}$$

$$3x = 78$$

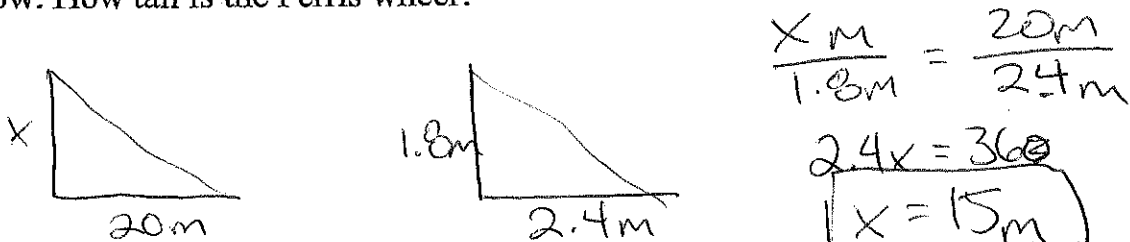
$x = 26 \text{ in}$

Use similar triangles to find the missing information.

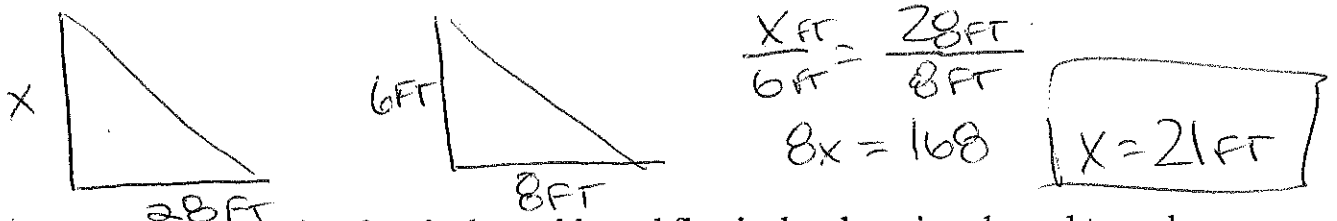
7. A giraffe is 18 feet tall and casts a shadow of 12 feet. Corry casts a shadow of 4 feet. How tall is Corry?



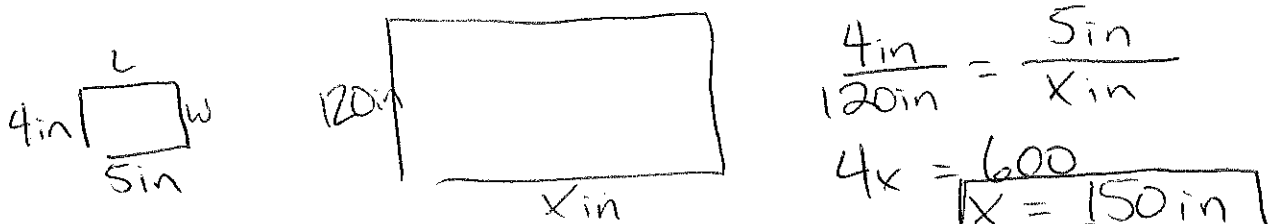
8. When a Ferris wheel casts a 20-meter shadow, a man 1.8 meters tall casts a 2.4-meter shadow. How tall is the Ferris wheel?



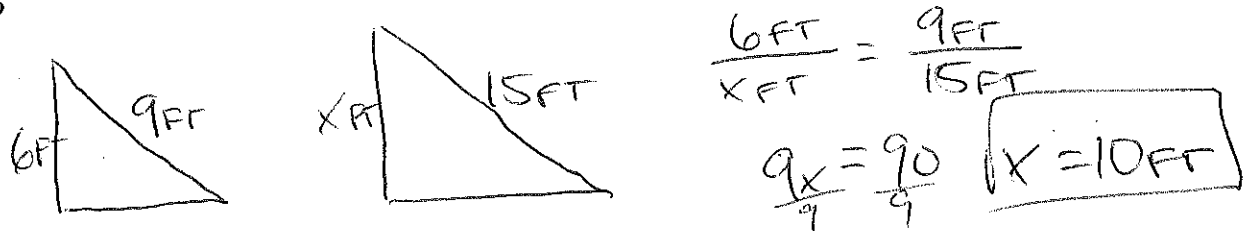
9. A flagpole casts a shadow 28 feet long. A person standing nearby casts a shadow eight feet long. If the person is six feet tall, how tall is the flagpole?



10. A photograph measuring four inches wide and five inches long is enlarged to make a wall mural. If the mural is 120 inches wide, how long is the mural?



11. A 9-foot ladder leans against a building six feet above the ground. At what height would a 15-foot ladder touch the building if both ladders form the same angle with the ground?



12. Chris wants to reduce a triangular pattern with sides 16, 16 and 20 centimeters. If the longest side of the new pattern is to be 15 cm, how long should the other two sides be?

