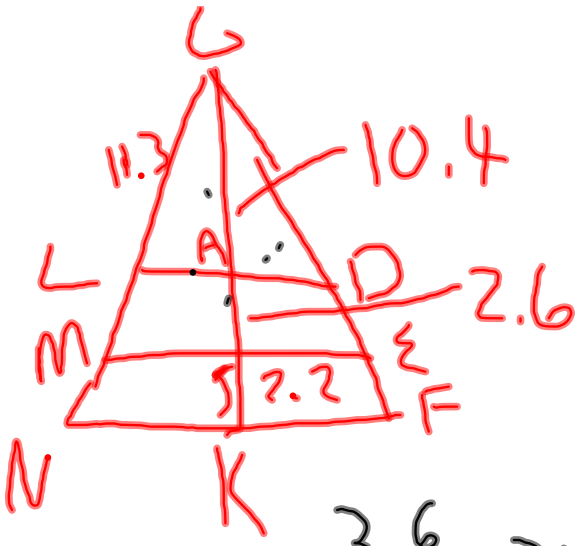


$$\frac{10.4}{2.6}\frac{11.3}{x}$$

$$10.4x = 29.38$$

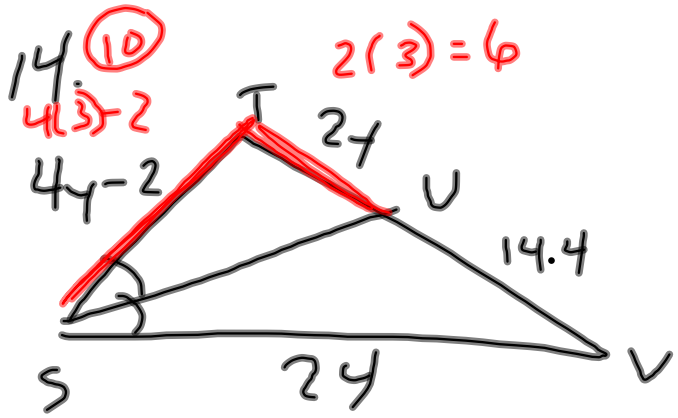
$$x = 2.825$$

$$\overline{LM} = 2.83$$

$$\frac{2.6}{2.2} = \frac{2.83}{x}$$

$$2.6x = 6.226$$

$$x = 2.39 \quad \overline{LN} = 2.39$$



$$2y = 14.4 \quad 4y-2 = 24$$

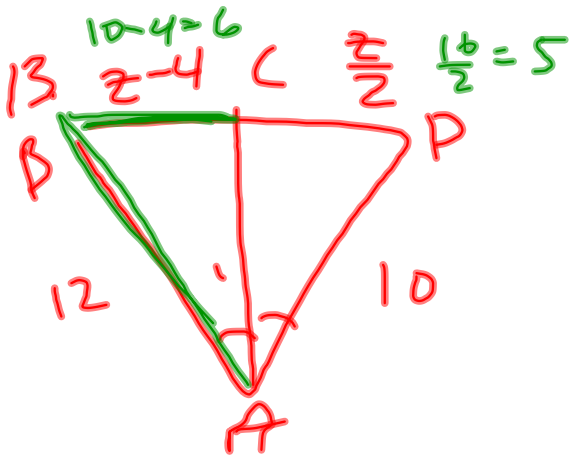
$$48y = 14.4(4y-2)$$

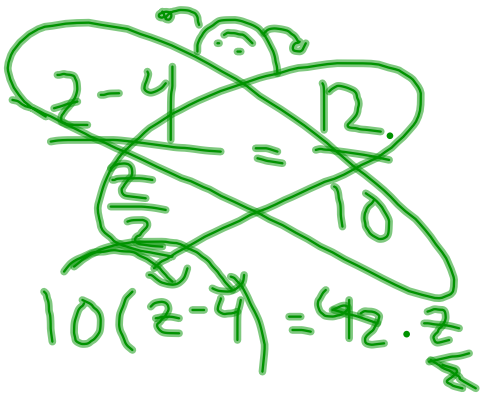
$$48y = 57.6y - 28.8$$

$$-57.6y \quad -57.6y$$

$$\frac{-9.6y}{-9.6} = \frac{-28.8}{-9.6}$$

$$y = 3$$





$10(z-4) = 12 \cdot \frac{z}{2}$

$10z - 40 = 6z$

$-10z \quad\quad -10z$

$-40 = -4z$

$\frac{-40}{-4} = \frac{-4z}{-4}$

$z = 10$

0 - 5 +

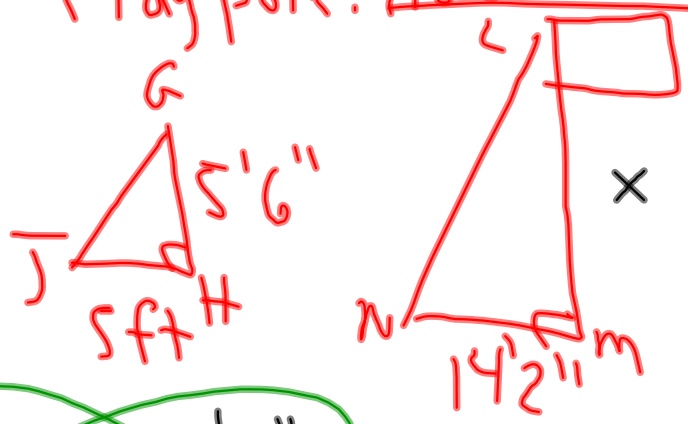
6 - 10 ✓

11 ↑ -

7.5 Proportional Relationships.

Indirect measurement: any method using formulas, similarity or proportions to measure.

Ex: a student is 5'6" tall. He measured his shadow and the shadow of a flagpole. How tall is the flagpole



$$\frac{5}{14'2"} = \frac{5'6"}{X}$$

$X = 15.58$ ft

Scale drawings: represents an object as larger or smaller than actual size.

Ex: On a map, Jill measured a distance of $11\frac{1}{8}$" from Madison to Wausau. The scale is 1 inch : 13 miles. What is the actual distance?

$\frac{11\frac{1}{8}"}{x} = \frac{1}{13}$ $11\frac{1}{8} \cdot 13 =$ 144.62 miles

A statue is 7.19 m long and 4.14 m wide. A scale is 1cm: .75 m. What should the dimensions of the scale be?

length

width

Proportional Areas and Perimeters thm

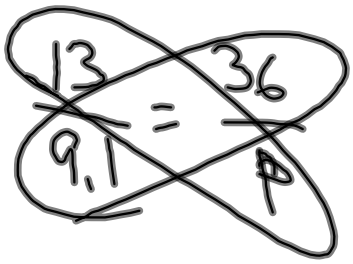
if the similarity ratio of 2 similar figures is $\frac{a}{b}$, then the ratio of the perimeters equals $\frac{a}{b}$, and the ratio of the areas is $\frac{a^2}{b^2}$.

Ex: Given $\triangle LMN \sim \triangle QRS$, find the area and perimeter of $\triangle QRS$.

$\triangle$ P = 36 cm

A = 60 cm²

P



$$\frac{(13)^2}{(9.1)^2} = \frac{60}{A}$$

$$\frac{13P}{13} = \frac{327.6}{13}$$

P = 25.2 cm

Hw: p. 491 2-23