

Pre-Algebra

Unit 10: Basic Geometry

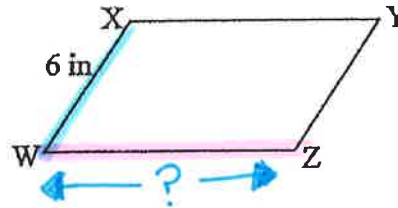
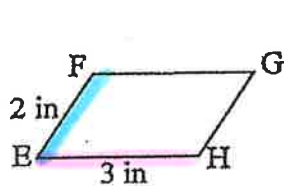
Lesson 10.3: Measurement of Similar Figures

Name: Key

Hour: _____

Find the missing measurement. Use a proportion to solve.

1. $EFGH \sim WXYZ$ Find the length of WZ .

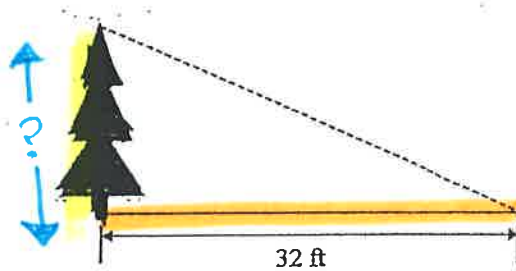
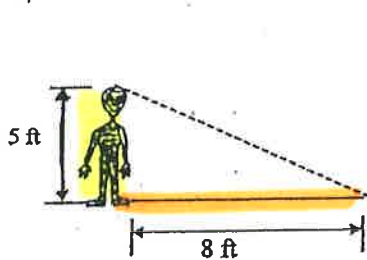


$$\frac{2}{3} = \frac{6}{x}$$

$$2x = 18$$

$$x = 9 \text{ inches}$$

2. What is the height of the tree?



$$\frac{5}{8} = \frac{x}{32}$$

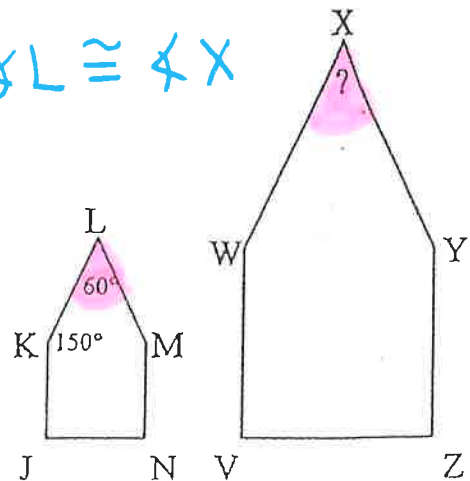
$$8x = 160$$

$$x = 20 \text{ feet}$$

3. Pentagon JKLMN is similar to Pentagon VWXYZ. What is the measure of angle X?

$$m\angle X = 60^\circ$$

$$\angle L \cong \angle X$$



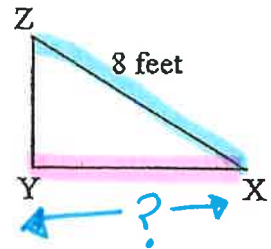
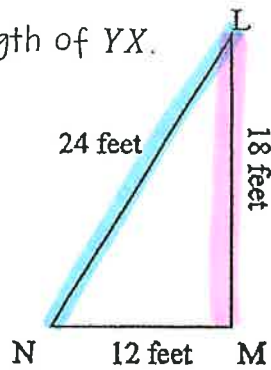
4. $\triangle LMN \sim \triangle XYZ$ Find the length of YX.

$$\frac{24}{18} = \frac{8}{x}$$

$$24x = 144$$

$$x = 6$$

$$\overline{yx} = 6 \text{ ft.}$$



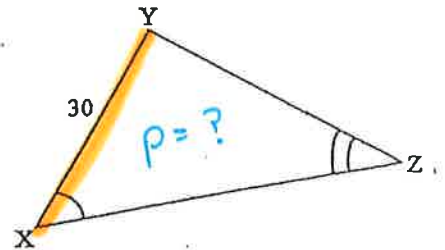
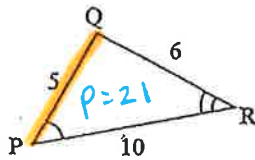
5. $\triangle PQR \sim \triangle XYZ$ What is the perimeter of $\triangle XYZ$?

$$\frac{5}{21} = \frac{30}{x}$$

$$5x = 630$$

$$x = 126$$

$$\text{perimeter} = 126 \text{ units}$$



6. Find the height of the pine tree, in feet.

inches:

$$\frac{8}{12} = \frac{288}{x}$$

$$8x = 3456$$

$$x = 432 \text{ in}$$

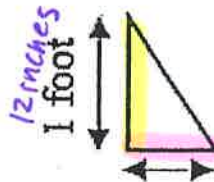
$$\div 12 = 36 \text{ feet}$$

feet:

$$\frac{2/3}{1} = \frac{24}{x}$$

$$2/3 x = 24$$

$$x = 36 \text{ feet}$$



8 inches

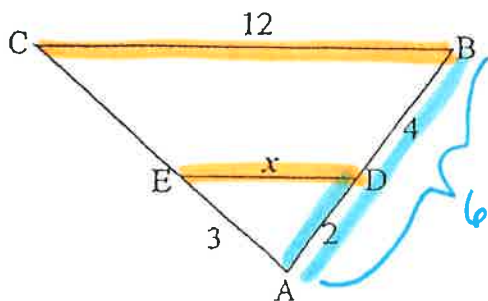
$$8/12 = 2/3 \text{ ft.}$$



24 feet

288 inches

7. Triangles ABC and ADE are similar. Find the value of x.



$$\frac{2}{x} = \frac{6}{12}$$

$$6x = 24$$

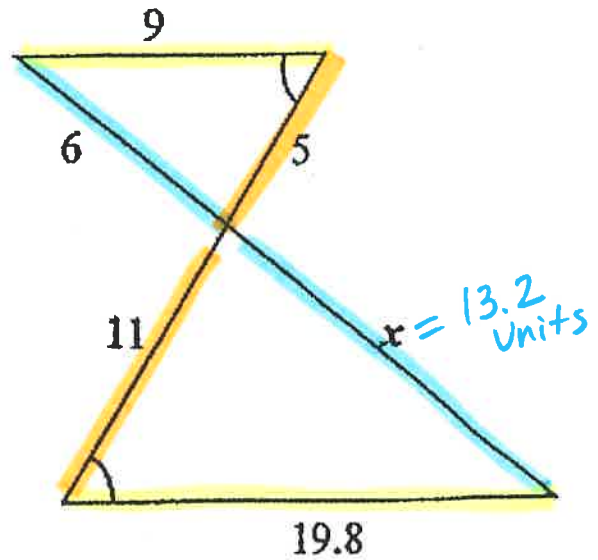
$$x = 4 \text{ units}$$

8. The two triangles are similar. Find the value of x .

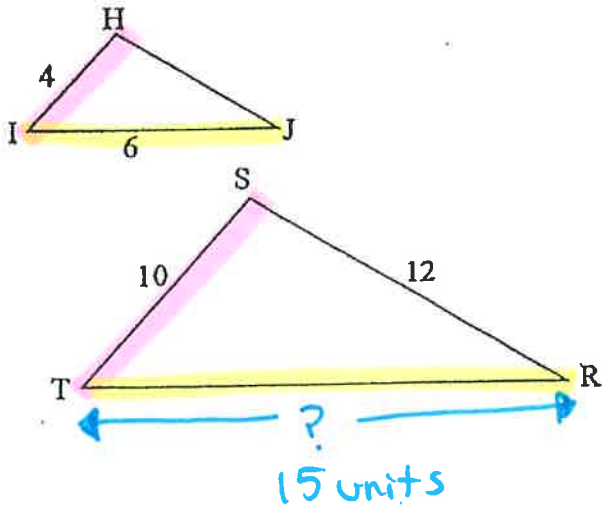
$$\frac{x}{19.8} = \frac{6}{9}$$

$$9x = 118.8$$

$$x = 13.2 \text{ units}$$



9. $\triangle HIJ \sim \triangle STR$ What is the perimeter of $\triangle STR$?



$$\frac{4}{6} = \frac{10}{x}$$

$$4x = 60$$

$$x = 15 \text{ units}$$

$$p = 10 + 12 + 15$$

$$p = 37 \text{ units}$$

