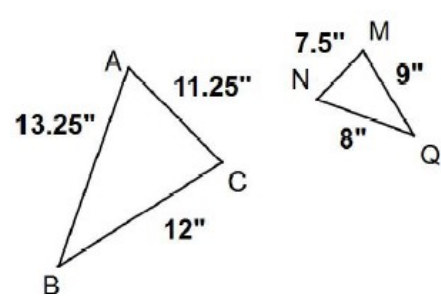
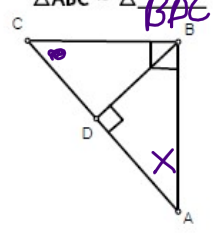


5) $\triangle ABC \sim \triangle ______ \text{ by } \underline{\text{NOT } \sim}$



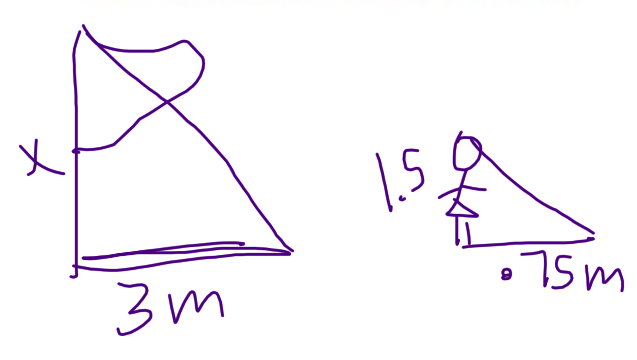
6) $\triangle ABC \sim \triangle ______ \text{ by } \underline{\text{AA} \sim}$
 $\triangle ABC \sim \triangle ______ \text{ by } \underline{\text{AA} \sim}$



$$\frac{11.25}{7.5} = \frac{12}{8} = \frac{13.25}{9}$$

$$\underline{1.5} = \underline{1.5} \neq 1.4777$$

8) A flag pole casts a shadow 3 meters long. A woman near the pole casts a shadow 0.75 meters long. The woman is 1.5 meters tall. How tall is the flag pole?



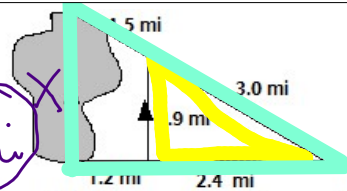
$$\frac{x}{1.5} = \frac{3}{0.75}$$

$X = 6m$

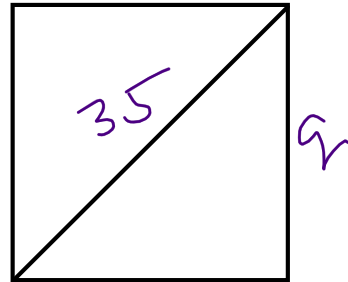
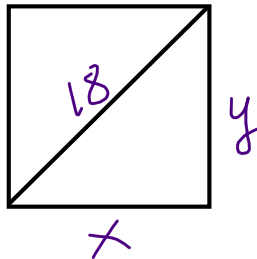
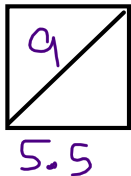
WORKSHEET - SIMILAR POLYGONS & TRIANGLES (p.2)

9) Use similar triangles to find the length of the lake.

$$\left(\frac{9}{x} = \frac{3}{4.5} \right) \frac{2.4}{3.6} \quad X = 1.35 \text{ mi}$$



10) Most TV screens have similar shapes. The measure of the diagonal is used to give screen size. Suppose the dimensions of a 9-inch screen are $5 \frac{1}{2}$ inches by $7 \frac{1}{2}$ inches. Find the dimensions of an 18-inch TV and a 35-inch TV.



$$\frac{9}{18} = \frac{5.5}{x} = \frac{7.5}{y}$$

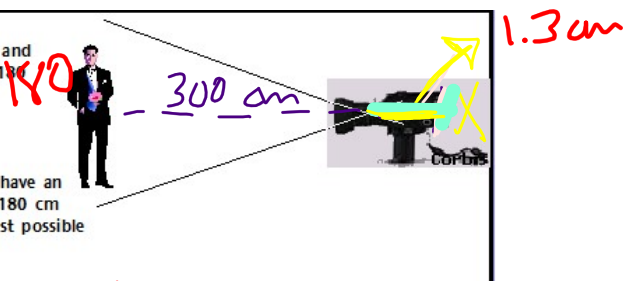
11 in by 15 in

$$\frac{9}{35} = \frac{5.5}{p} = \frac{7.5}{q}$$

21.4 in by 29.2 in

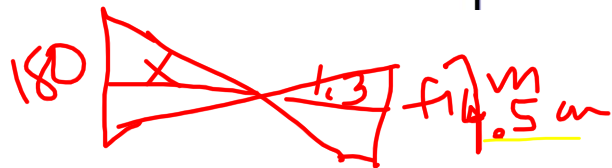
11) Suppose a person is 300 cm from a camera lens, and the film is 1.3 cm from the lens. If the person is 180 cm tall, how tall is his image on the film?

$$\frac{180}{x} = \frac{300}{1.3} \quad X = 0.78 \text{ m}$$



12) Suppose the film is 1.3 cm from the lens and can have an image no more than 4.5 cm tall. If the person is 180 cm tall, how far from the lens can he be for the largest possible full length image?

$$\frac{180}{4.5} = \frac{x}{1.3}$$



X = 52 cm

- 14) The measures of two supplementary angles are in the ratio 14:31. Find the measure of each angle.

$$14x + 31x = 180$$

$$x = 4$$

$$14 \cdot 4 = 56^\circ$$

$$31 \cdot 4 = 124^\circ$$

- 15) A 78cm segment is divided into three parts whose lengths are in the ratio 3:4:6. Find the length of each part of the segment.

$$3x + 4x + 6x = 78$$

$$13x = 78$$

$$x = 6$$

$$3 \cdot 6 = 18 \text{ cm}$$

$$4 \cdot 6 = 24 \text{ cm}$$

$$6 \cdot 6 = 36 \text{ cm}$$

16) A quadrilateral has a perimeter of 92 cm and one side measures 16 cm. The lengths of the other three sides are in the ratio 5:6:8. Find the lengths of the three missing sides.

$$5x + 6x + 8x + \underline{16} = 92$$

$$19x + 16 = 92$$

$$19x = 76$$

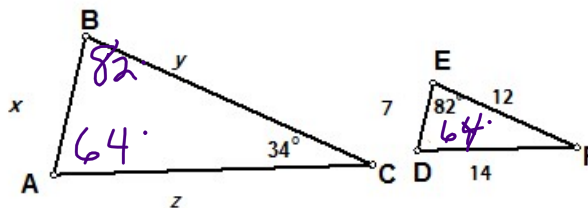
$$x = 4$$

$$\begin{aligned} 5 \cdot 4 &= 20 \text{ cm} \\ 6 \cdot 4 &= 24 \text{ cm} \\ 8 \cdot 4 &= 32 \text{ cm} \end{aligned}$$

17) $\triangle ABC \sim \triangle DEF$; $m\angle A = \underline{64^\circ}$; $m\angle E = \underline{82^\circ}$; $x = \underline{\quad}$; $y = \underline{\quad}$; $z = \underline{\quad}$

The perimeter of $\triangle ABC$ is 36.

$$\begin{array}{r} 82 \quad 180 \\ + 34 \quad - 716 \\ \hline 116 \quad 64 \end{array}$$



$$\frac{x}{7} = \frac{y}{12} = \frac{z}{14} = \frac{36}{33}$$

$$\frac{x}{7} = \frac{12}{11}$$

$$x = \frac{84}{11}$$

$$\frac{y}{12} = \frac{12}{11}$$

$$y = \frac{144}{11}$$

$$\frac{z}{14} = \frac{12}{11}$$

$$z = \frac{168}{11}$$