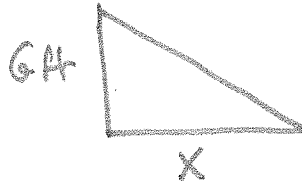
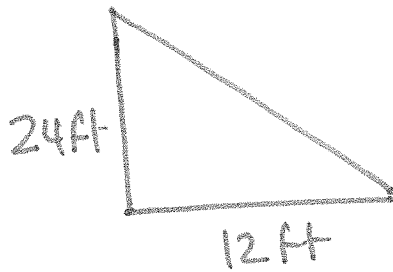


Name: Key

Direction: Draw a picture for the following in order to solve the problem.

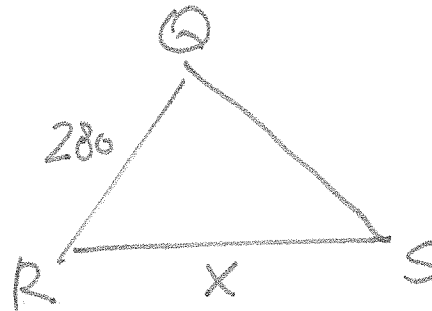
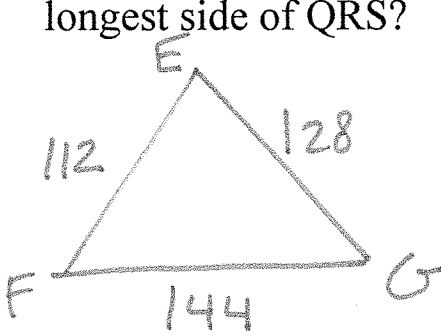
1. A tree 24 feet tall casts a shadow 12 feet long. Brad is 6 feet tall. How long is Brad's shadow? (draw a diagram and solve)



$$\frac{24}{6} = \frac{12}{x}$$

$$x = 8 \text{ ft}$$

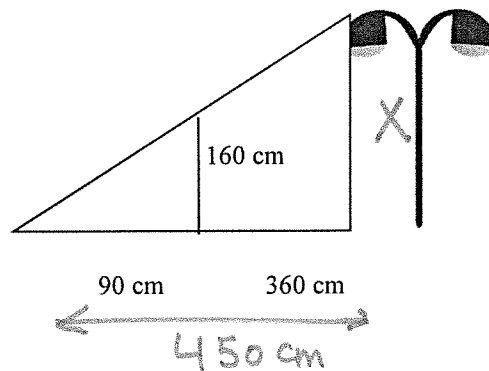
2. Triangles EFG and QRS are similar. The length of the sides of EFG are 144, 128, and 112. The length of the smallest side of QRS is 280, what is the length of the longest side of QRS?



$$\frac{112}{280} = \frac{144}{x}$$

$$x = 280$$

3. A girl 160 cm tall, stands 360 cm from a lamp post at night. Her shadow from the light is 90 cm long. How high is the lamp post?



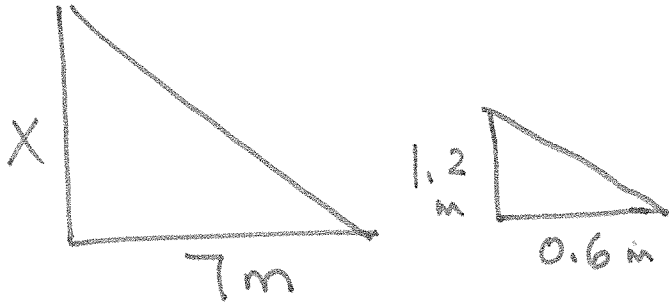
$$\frac{160}{90} = \frac{x}{450}$$

$$x = 800 \text{ cm}$$

Name: _____

7.5 Word Problems similar triangles

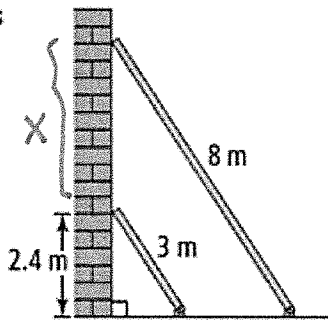
4. A tower casts a shadow 7 m long. A vertical stick casts a shadow 0.6 m long. If the stick is 1.2 m high, how high is the tower?



$$\frac{X}{1.2} = \frac{7}{0.6}$$

$$X = 14 \text{ m}$$

5. Two extension ladders are leaning at the same angle against a vertical wall. The 3-m ladder reaches 2.4 m up the wall. How much farther up the wall does the 8-m ladder reach?

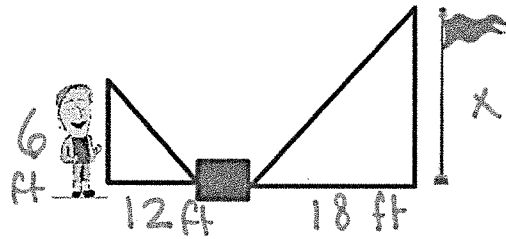


$$\frac{2.4}{3} = \frac{X + 2.4}{8}$$

$$19.2 = 3X + 7.2$$

$$\frac{12}{3} = \frac{3X}{3} \quad X = 4 \text{ m}$$

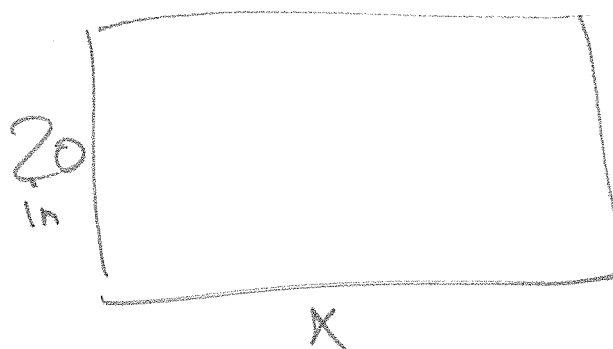
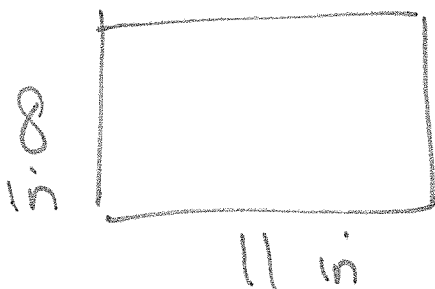
6. Tony who is 6 ft tall is looking at a mirror on the ground 12 feet in front of him and he can see the top of the flag pole. He knows the distance from the mirror to the flag pole is 18 ft and that the 2 triangles are similar. How tall is the flag pole?



$$\frac{6}{X} = \frac{12}{18}$$

$$X = 9 \text{ ft}$$

7. Mr. Smith is having some photos enlarged for his studio. He wants to enlarge a photo that is 8 inches by 11 inches (length by width) so that the length is 20 inches, what does the width have to be? _____

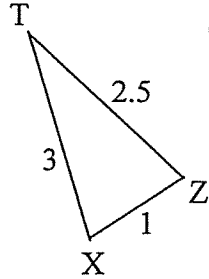
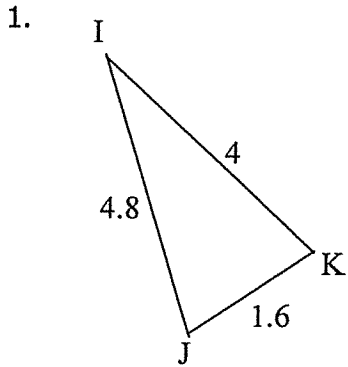


$$X = 27.58 \text{ in}$$

Geometry
Justifying Similar Triangles

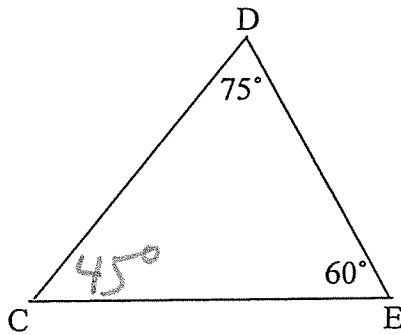
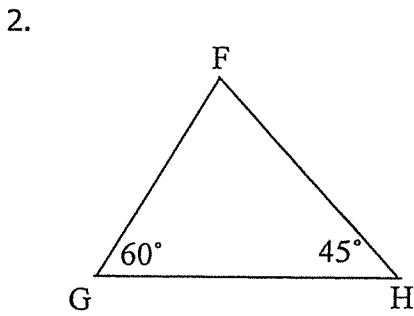
Name Key

Determine whether each pair of triangles is similar. If the triangles are similar, justify your answer by using SSS, SAS, and AA. Make sure you have work to support your answer.



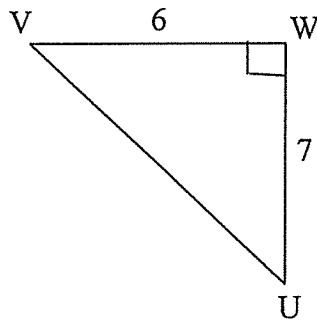
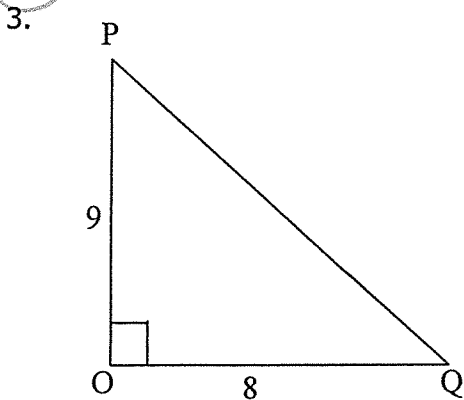
✓ $\frac{4.8}{3} \stackrel{?}{=} \frac{4}{2.5} \stackrel{?}{=} \frac{1.6}{1} \approx 1.6$

Yes No Δ IJK \sim Δ TXZ by SSS



$\angle G \cong \angle E$
 $\angle C \cong \angle H$ Some of angles of a triangle.

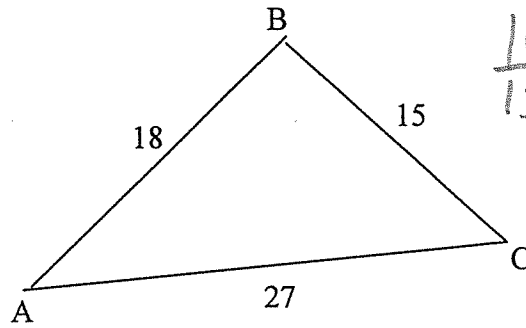
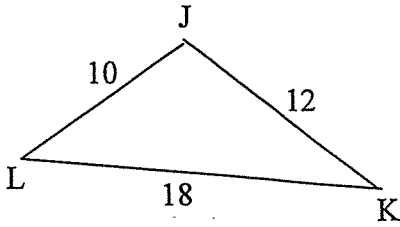
Yes No Δ FGH \sim Δ DEC by AA



$\angle W \cong \angle O$ right angle
 $\frac{9}{7} \stackrel{?}{=} \frac{8}{6}$ X

Yes No Δ _____ \sim Δ _____ by _____

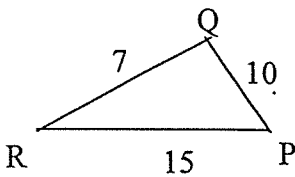
8.



$$\frac{10}{15} = \frac{12}{18} = \frac{18}{27}$$

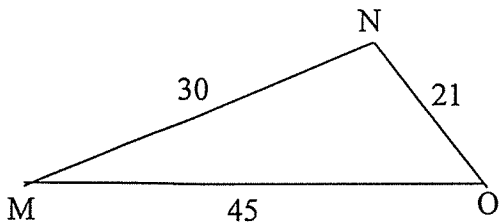
Yes No Δ LJK \sim Δ BAC by SSS

9.



Yes No

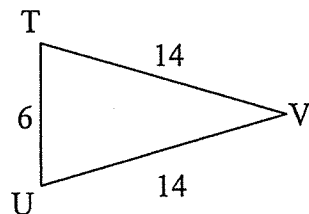
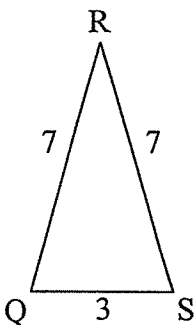
$$\frac{7}{30} = \frac{10}{21} = \frac{15}{45}$$



Δ _____ \sim Δ _____

by _____

10.

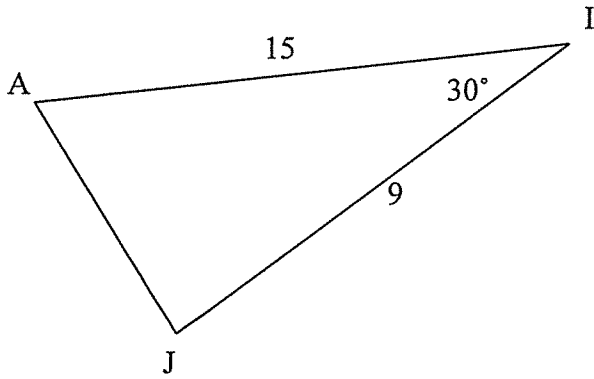
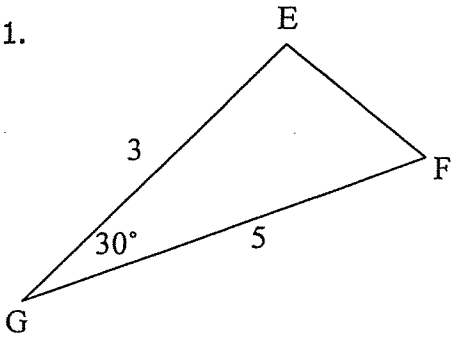


Yes No $\frac{3}{6} = \frac{7}{14}$ ✓

Δ RQS \sim Δ VTU

by SSS

11.



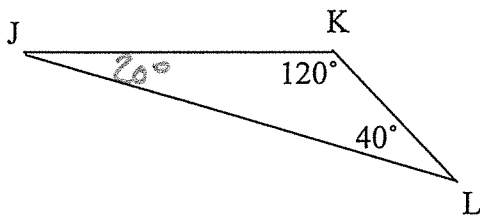
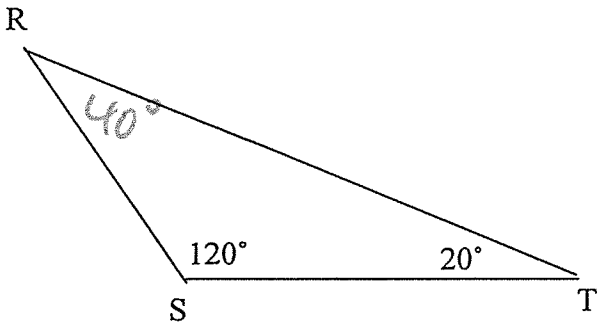
Yes No

$$\frac{15}{5} \stackrel{?}{=} \frac{3}{9} \checkmark$$

$\triangle GEF \sim \triangle IAJ$

by SAS

12.



Yes No

$\angle S \cong \angle K$
 $\angle T \cong \angle J$ sum of angles of a triangle

$\triangle RST \sim \triangle JKL$

by AA

