

Apprenticeship Math 12
ASSIGNMENT: Similar Triangles

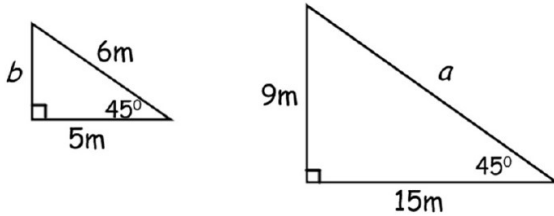
Name: _____

Date: _____

Please show your work. If necessary, round to the nearest tenth.

1. Each pair of triangles are similar. Calculate the indicated lengths.

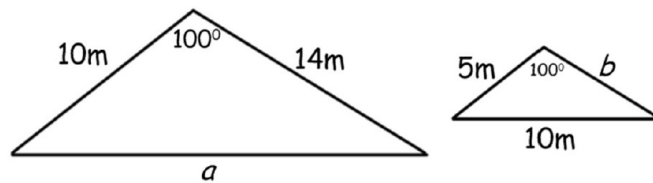
a)



a = _____

b = _____

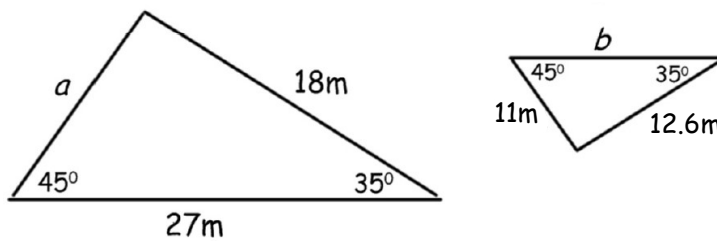
b)



a = _____

b = _____

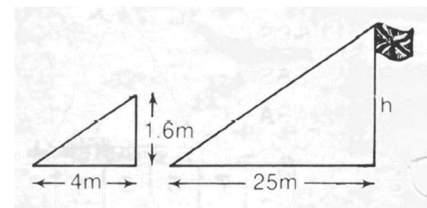
c)



a = _____

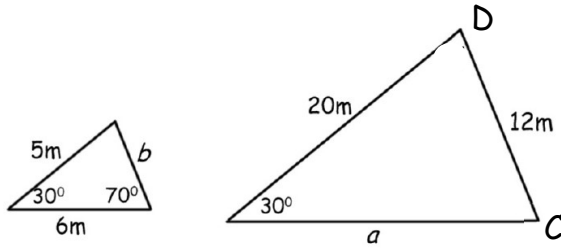
b = _____

2. A flagpole casts a shadow 25 m long. If a woman who is 1.6 m tall casts a shadow 4 m long at the same time and at the same location, how tall is the flagpole?



3. Each pair of triangles are similar. Calculate the indicated lengths and angles.

a)



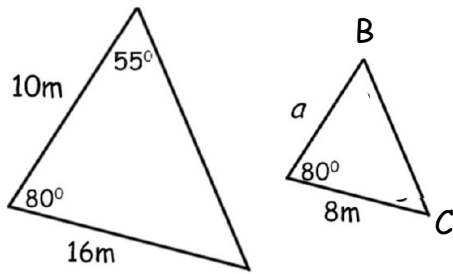
$a = \underline{\hspace{2cm}}$

$b = \underline{\hspace{2cm}}$

$\angle C = \underline{\hspace{2cm}}$

$\angle D = \underline{\hspace{2cm}}$

b)



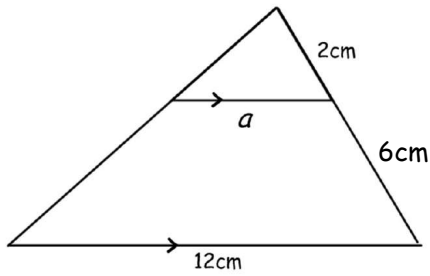
$a = \underline{\hspace{2cm}}$

$\angle B = \underline{\hspace{2cm}}$

$\angle C = \underline{\hspace{2cm}}$

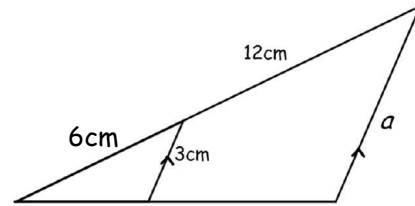
4. Calculate the indicated lengths.

a)



$a = \underline{\hspace{2cm}}$

b)



$a = \underline{\hspace{2cm}}$

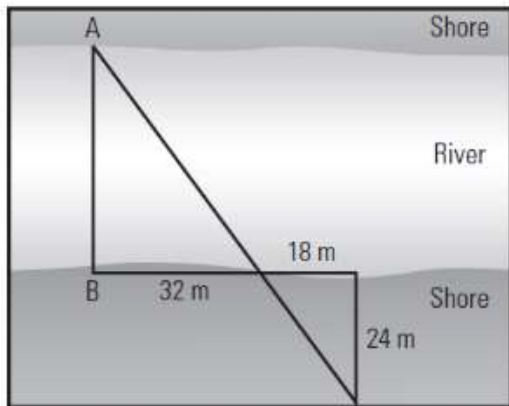
5. Given that $\triangle ABC$ is similar to $\triangle RST$, AB is 6 cm long, BC is 5 cm long, and RS is 8 cm long, find the length of side ST (to the nearest tenth).

$ST =$ _____

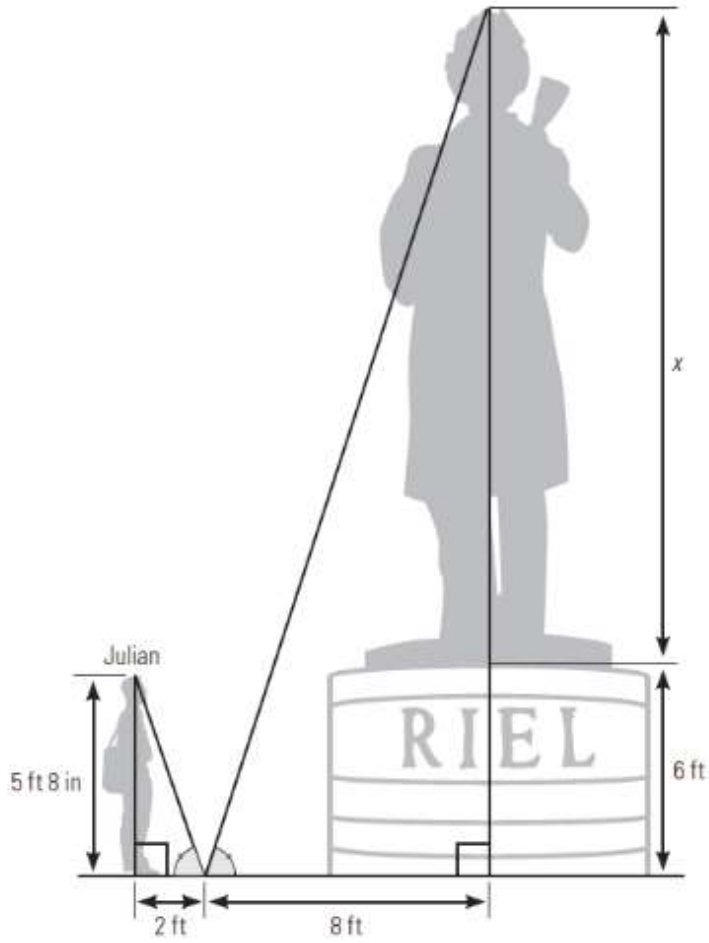
Are you given enough information to find the length of the third side (TR)? _____
 Explain.

6. Assuming that the slope of a hill is constant, and that a point 100 m along the surface of the hill is 4.2 m higher than the starting point, how high will you be if you walk 250 m along the slope of the hill? Round your answer to the nearest tenth.
Hint: Draw a sketch!

7. To determine the distance across a river (AB), Lila took the following measurements. Assuming the two triangles in the diagram are similar, how wide is the river? Round your answer to the nearest tenth.



8. Julian is visiting the Manitoba Legislative Building in Winnipeg, where he sees the statue of Louis Riel. Use the information in the diagram to find the height of the statue. Round your answer to the nearest foot.



1. a) $a = 18$ m, $b = 3$ m b) $a = 20$ m, $b = 7$ m c) $a = 15.7$ m, $b = 18.9$ m
 2. 10 m
 3. a) $a = 24$ m, $b = 3$ m, $\angle C = 70^\circ$, $\angle D = 80^\circ$
 b) $a = 5$ m, $\angle B = 55^\circ$, $\angle C = 45^\circ$
 4. a) $a = 3$ cm b) $a = 9$ cm
 5. 6.7 m, No. You would need to know the length of side AC.
 6. 10.5 m
 7. 42.7 m
 8. 17 ft