MFM 2P1 Name: _____

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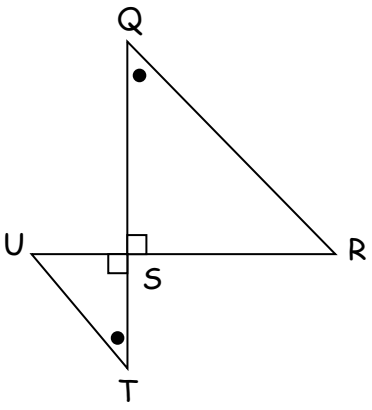
Sure Bets #1 - Triangles

1. Complete the statements about the pair of similar triangles.

$\frac{RS}{US} = \frac{QR}{\_\_}$ $\frac{SQ}{ST} = \frac{\_\_}{TU}$

4 $\frac{US}{RS} = \frac{ST}{\_\_}$ $\angle RQS = \angle \_\_\_$ $\Delta QRS \sim \Delta \_\_\_$

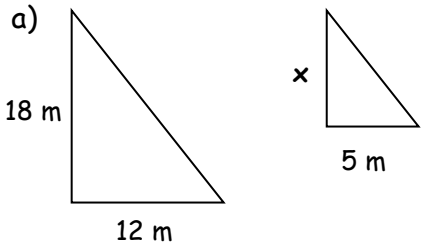
$\angle QRS = \angle \_\_\_$ $\angle UST = \angle \_\_\_$



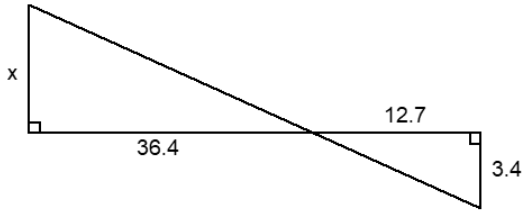
2. Using the similar triangles below, determine the unknown measure.

4

a)



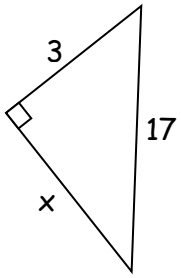
b)



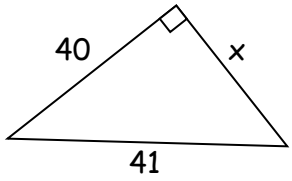
3. Use $a^2 + b^2 = c^2$ to determine the unknown side.

4

a)

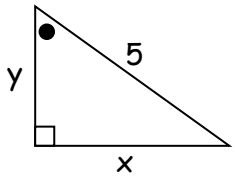


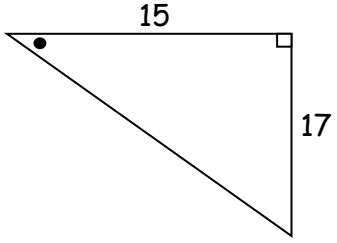
b)



4. Use Pythagoras and the properties of similar triangles to determine the unknowns in the following diagram.

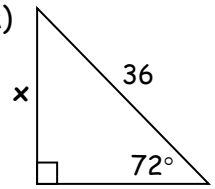
6



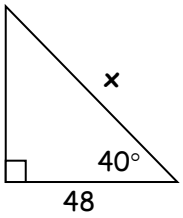


5. Solve for the following unknowns using SOHCAHTOA.

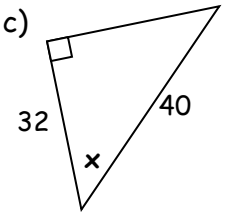
a)



b)



c)



6

6. A kite is flying overhead at an angle of elevation of 28°. If the kite string is 10 m long, what is the horizontal distance that the kite is flying away from you? Draw a diagram.

3

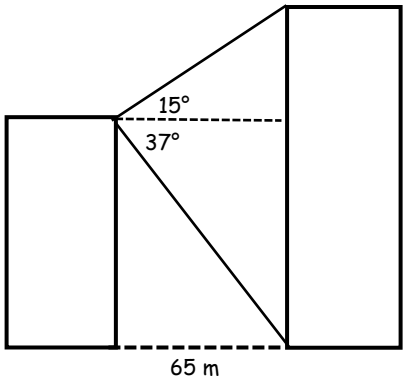
7. A rocket is launched at an angle of 80° to the ground and travels in a straight line. What is the rocket's height when it has traveled for 15 km?

3

8. A tree that is 8.5 m tall casts a shadow 6 m long. At what angle are the sun's rays hitting the ground?

3

9. From the roof of a building, the angle of elevation to the roof of a nearby building is 15°. The angle of depression to the base of the same nearby building is 37°. If the buildings are 65 m apart, how tall is the nearby building?



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