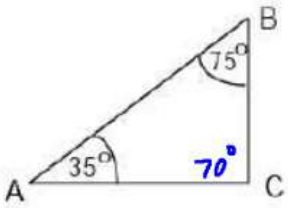
Geometry

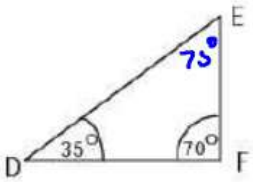
Chapter 7 Review

Name _____

Date _____ Per _____

1. State whether or not the following triangles are similar and support your answer.

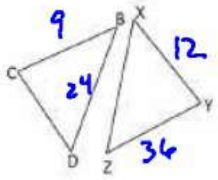




AA
SAS
SSS

Yes ~ by AA

2. In the figure given to the left, ΔXYZ is similar to ΔBCD.



BC=9
XY=12
BD=24
ZY=36

$\frac{BC}{XY} = \frac{CD}{YZ}$

a. Find the value of XZ.

$\frac{BC}{XY} = \frac{BD}{XZ}$

$\frac{9}{12} = \frac{24}{x}$

$9x = 288$

$x = 32$

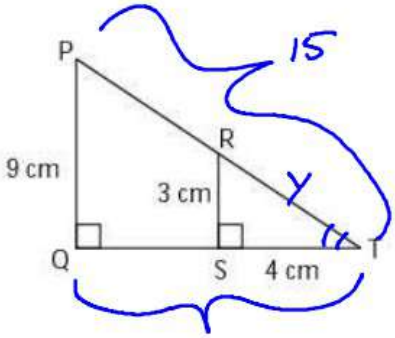
$\frac{9}{12} = \frac{CD}{36}$

b. Find the value of CD

$12(CD) = 324$

$CD = 27$

3. Looking at the triangles in the figure on the right:
   a) Are the two triangles similar? Yes AA
   b) What is the length of QT?
   c) If PT is 15 cm, what is the length of RT?



b) $\frac{9}{x} = \frac{3}{4}$

$3x = 36$

$x = 12$

c) $\frac{y}{15} = \frac{3}{9}$

$9y = 45$

$y = 5$

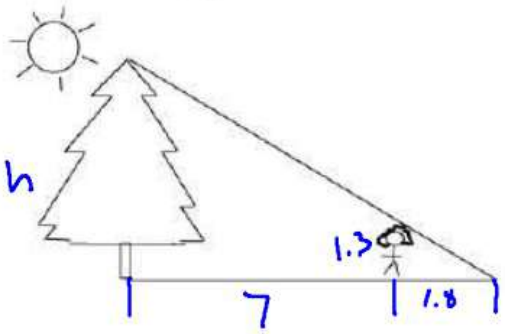
12

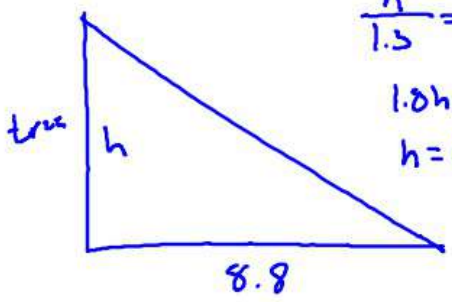
$\frac{y}{15} = \frac{4}{12}$

$12y = 60$

$y = 5$

4. Tonya is 1.3 meters tall. She stands 7 meters in front of a tree and casts a shadow 1.8 meters long. How tall is the tree?

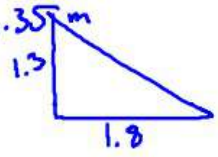




$\frac{h}{1.3} = \frac{8.8}{1.8}$

$1.8h = 11.44$

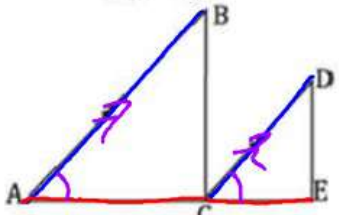
$h = 6.35$ m



5.

Given: $\frac{AB}{DC} = \frac{AC}{CE}$, $\overline{AB} \parallel \overline{CD}$

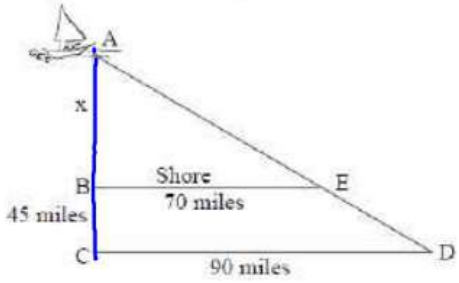
AA
SAS
SSS



Prove: $\triangle ABC \sim \triangle CDE$

Statement	Reason
1) $\frac{AB}{DC} = \frac{AC}{CE}$, $\overline{AB} \parallel \overline{CD}$	1) Given
2) $\angle A \cong \angle DCE$	2) Corresponding $\angle$s $\cong$
	3) SAS

6. Captain Cook needs to know the distance from his ship to the shore. He knows the measures given and that $\overline{BE} \mid \overline{CD}$.



Note: The figure is not drawn to scale.

What is the distance (x) from his ship to the shore? Use mathematics to explain how you determined your answer. Use words, symbols, or both in your explanation.

$\frac{x}{70} = \frac{x+45}{90}$

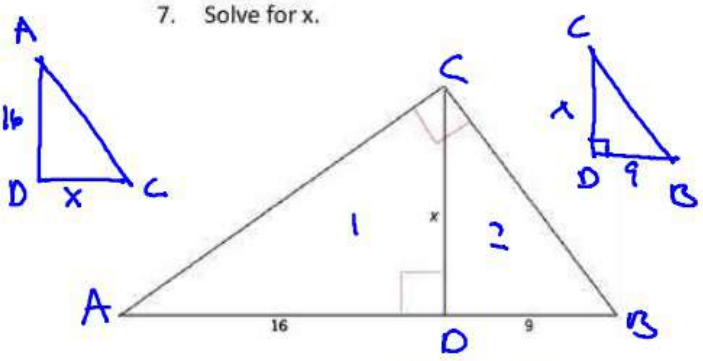
$90x = 70(x+45)$

$90x = 70x + 3150$

$20x = 3150$

$x = 157.5$ m.

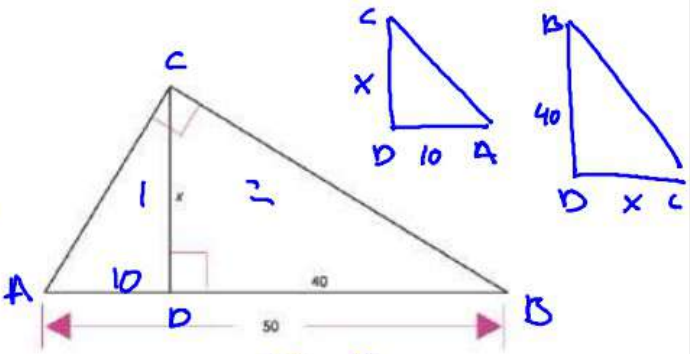
7. Solve for x.



$\frac{16}{x} = \frac{x}{9}$

$x^2 = 144$

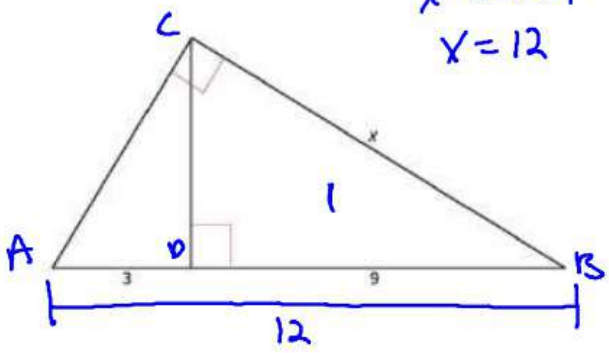
$x = 12$

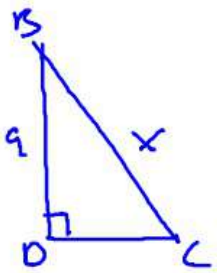


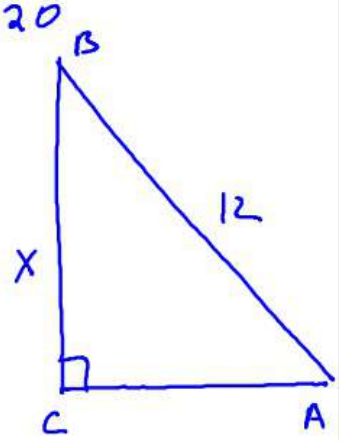
$\frac{10}{x} = \frac{x}{40}$

$x^2 = 400$

$x = 20$





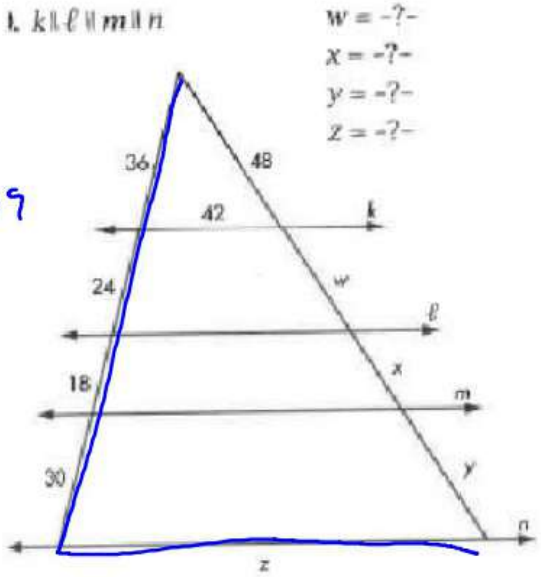


8.

$\frac{9}{x} = \frac{x}{12}$

$x^2 = 108$

$x = 10.39$

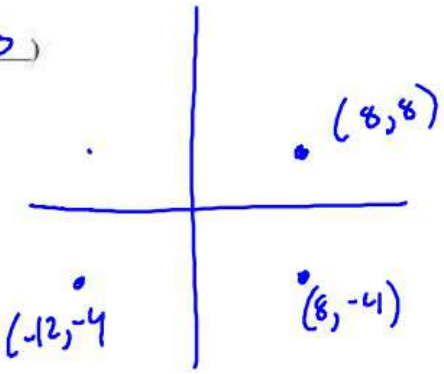


$\frac{36}{42} = \frac{108}{z}$

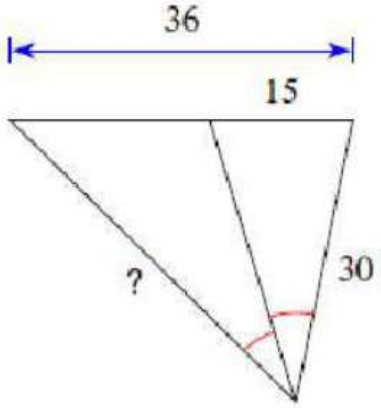
9. A rectangle has vertices A(-12, -4) B(-12, 8) C(8, 8) D(8, -4).

a. $D_{(\frac{1}{4}, \frac{1}{4})}$ (D) Write the new coordinates.

A'(5, 0) B'(____, ____) C'(0, 3) D'(0, 0)



10. Solve for the unknown value.



Solve for x.

17)