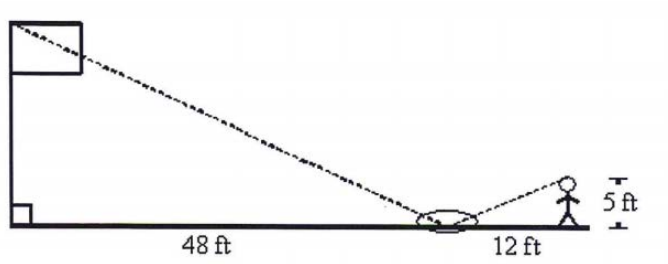
First name: _____ Last name:_____ ID: _____

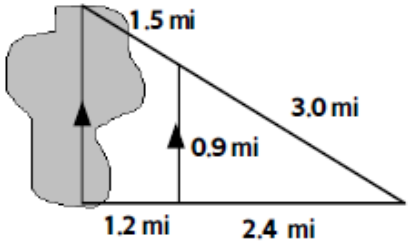
Similar Triangles 2 Homework

1. 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?

2. Michele wanted to measure the height of her school's flagpole. She placed a mirror on the ground 48 feet from the flagpole, then walked backwards until she was able to see the top of the pole in the mirror. Her eyes were 5 feet above the ground and she was 12 feet from the mirror. Find the height of the flagpole to the nearest tenth of a foot.



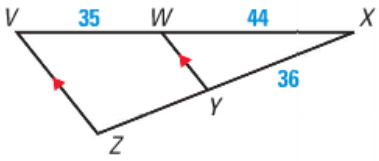
3. Use similar triangles to find the length of the lake.



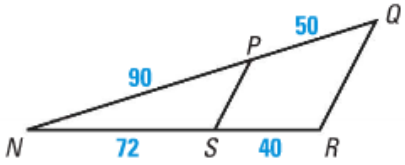
4. Triangles CDE and NOP are similar. The perimeter of smaller triangle CDE is 133. The lengths of two corresponding sides on the triangles are 53 and 212. What is the perimeter of NOP? If the area of smaller triangle CDE is 159 square units, what is the area of NOP?

5. Two triangles are similar. The sides of the first triangle are 7, 9, and 11. The smallest side of the second triangle is 21. Find the perimeter of the second triangle.

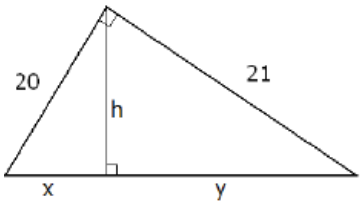
6 a. Find the length of $\overline{YZ}$.



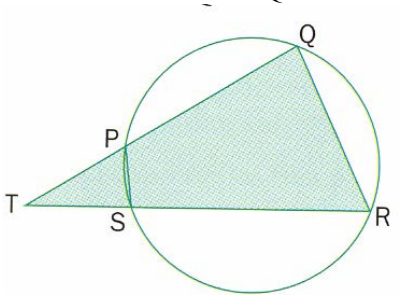
b. Determine whether $\overline{PS} \| \overline{QR}$.



7. Find x, y, and h based on the picture below.

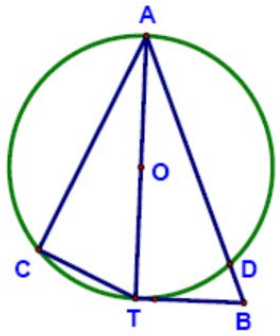


8. Given: Quadrilateral PQRS is cyclic – in a circle and opposite angles are supplementary.
Prove: ΔTPS ~ ΔTRQ



9. Given: O is the centre of the circle. BT is tangent of the circle at T. T is the midpoint of arc CD.

Prove: $\Delta CAT \sim \Delta TAB$



10. Given: Chords AB and CD of circle O intersect at E, an interior point of circle O.

Prove: $\Delta AED \sim \Delta CEB$