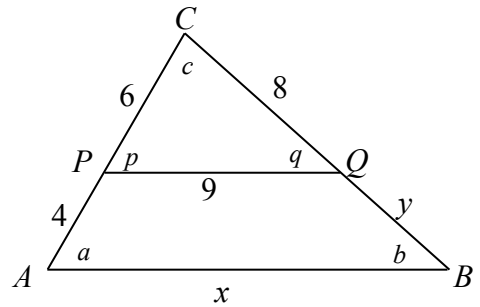


Geometry Notes S - 4: Solving Similar Triangle Problems

Ex: In the diagram, $\overline{PQ} \parallel \overline{AB}$.

a. Is $\triangle ABC \sim \triangle PQC$?



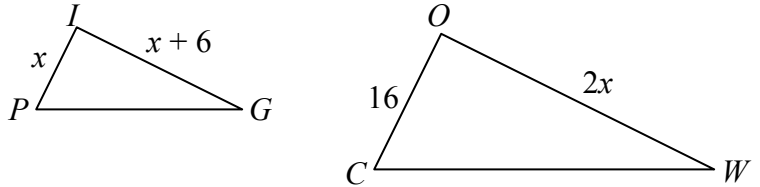
b. Find the values of x and y .

Ex: Amber stands up on stage trying out for a role in a play. A footlight shines on her from eight feet in front of her. Six feet behind her is a tall light colored backdrop. If Amber is five feet eight inches tall, how tall is her shadow on the backdrop?

Geometry HW: Similarity - 4

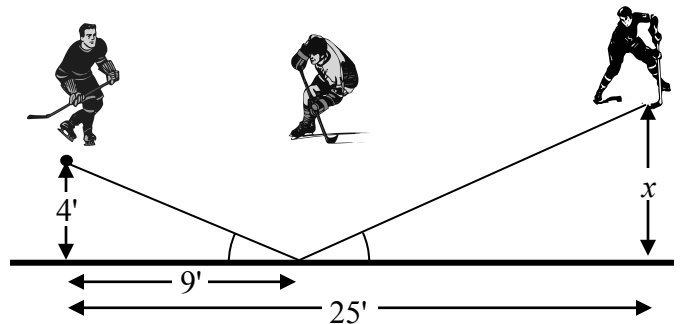
1. The sides of a triangle measure 12, 18, and 20. If the smallest side of a similar triangle measures 16, find the lengths of the other two sides.

2. In the diagram at right, $\triangle PIG \sim \triangle COW$. Find the value of x .

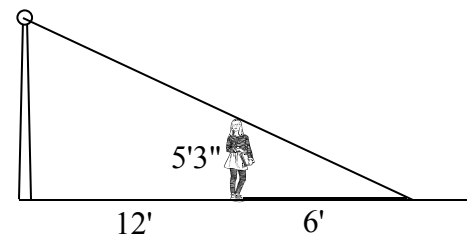


3. Sergeant Snorkel's army tent is in the shape of an isosceles triangle. The floor is 6 feet wide and the walls have a slant height of 8 feet. Sarge's dog Otto has his own "pup tent," similar to Sarge's but with walls having a slant height of only 3 feet. How wide is the floor of Otto's tent?

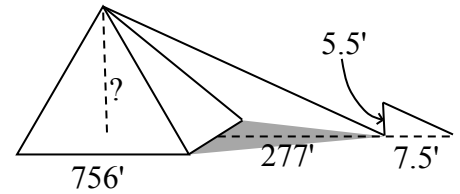
4. A hockey player passes the puck to a teammate by bouncing it off the boards. The player is 4 feet out from the boards; his teammate is 25 feet down the rink. If the puck bounces off the boards 9 feet down ice from the passing player, how far out from the boards will it be picked up by his teammate? Note: If the puck isn't spinning, the angles its path makes with the boards will be the same on both sides of the bounce.



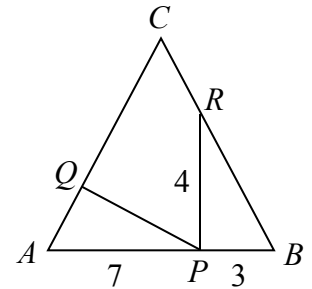
5. A 5'3" tall girl stands 12 feet from the base of a lamppost. The length of her shadow is 6 feet. How high is the light at the top of the lamppost?



6. Somewhere around 600 BCE, Thales of Miletus is supposed to have calculated the height of the Great Pyramid by standing at the tip of the pyramid's shadow and then measuring the lengths of both his and the pyramid's shadows. Suppose Thales stood 5.5 feet tall and his shadow measured 7.5 feet when the pyramid's shadow measured 277 feet from the base of the pyramid. The base of the pyramid measured 756 feet. What would Thales's calculated height of the pyramid have been?



7. In the diagram, $\triangle ABC$ is isosceles with vertex C , $\overline{PQ} \perp \overline{AC}$ and $\overline{PR} \perp \overline{AB}$.
 $AP = 7$, $PB = 3$ and $PR = 4$.
- Write a similarity statement for two triangles and justify why they are similar.
 - Find the length of BR .
 - Find the length of PQ .



8. In $\triangle QRS$, $QR = 7$, $RS = 13$ and $m\angle R = 46^\circ$. In $\triangle UVT$, $VT = 14$, $TU = 28$, and $m\angle T = 46^\circ$. State whether the triangles are similar and if so, write a similarity statement.