

7.10

Name (print first and last) _____

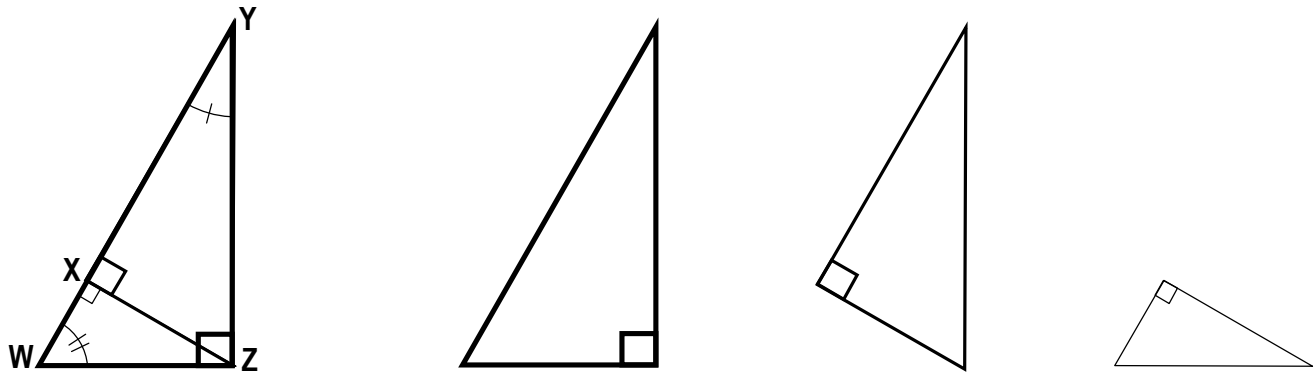
Per _____ Date: 3/14 due 3/18

7.10 Similarity: Mean Proportion of Right Triangles

Geometry Regents 2013-2014 Ms. Lomac

SLO: I can solve similarity problems with overlapping right triangles.

(1) W, X, Y, and Z are labeled in the diagram of overlapping triangles. The triangles have been drawn separately. Label the triangles that have been drawn separately with the letters W, X, Y, and Z. Mark angles that are congruent with the marks shown in the first triangle.

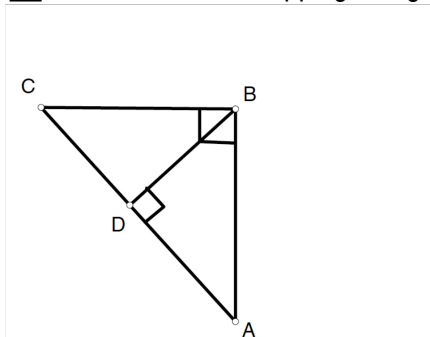


(a) Explain how we know that $\triangle ZYW \sim \triangle XYZ$ by AA~ _____

(b) Explain how we know that $\triangle ZYW \sim \triangle XZW$ by AA~ _____

(c) If we know that $\triangle ZYW \sim \triangle XYZ$ and $\triangle ZYW \sim \triangle XZW$, then can we say $\triangle XYZ \sim \triangle XZW$? Justify your answer.

(2) Redraw the 3 overlapping triangles separately and write 3 similarity statements for each of the 3 pairs of triangles.



$\triangle BCA \sim$ _____

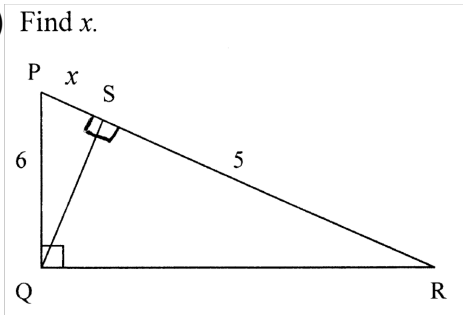
$\triangle BCA \sim$ _____

$\triangle DBA \sim$ _____

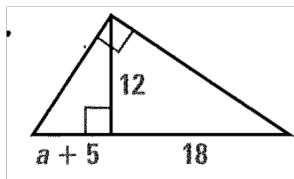
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(2) Draw separate triangles, identify corresponding parts, and write and solve a proportion for each variable.

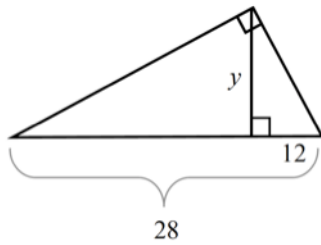
(a) Find x .



(b) Find the length of the hypotenuse of the largest triangle

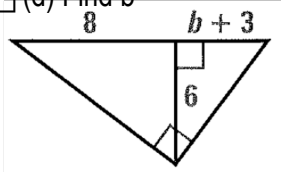


(c) Find y



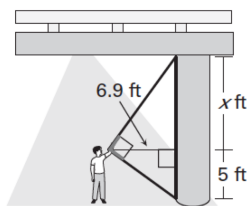
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(d) Find b



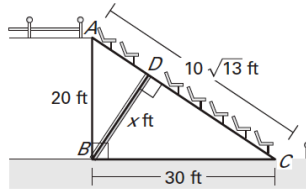
(3) **Overpass** To find the clearance under an overpass, you need to find the height of a concrete support beam.

You use a cardboard square to line up the top and bottom of the beam. Your friend measures the vertical distance from the ground to your eye and the distance from you to the beam. Approximate the height of the beam.



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- (4) **Stadium** A cross section of a group of seats at a stadium shows a drainage pipe \overline{BD} that leads from the seats to the inside of the stadium. What is the length of the pipe?



- (4) Find the measure from A to B

