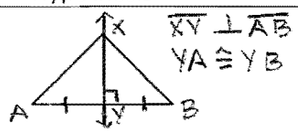
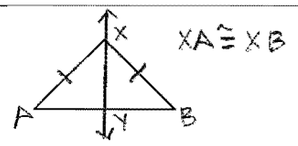
Geometry CC
6.1 - Perpendicular and Angle Bisectors

Name: _____
September 25, 2013

Vocabulary:

- **When a point is the same distance from two or more objects, the point is said to be _____ from the objects.**

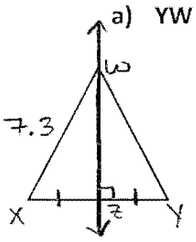
Distance and Perpendicular Bisectors

Theorem	Hypothesis	Conclusion
Perpendicular Bisector Theorem: If a point is on the perpendicular bisector of a segment, then it is equidistant from the endpoints of the segment.		
Converse of the Perpendicular Bisector Theorem: If a point is equidistant from the endpoints of a segment, then it is on the perpendicular bisector of the segment		

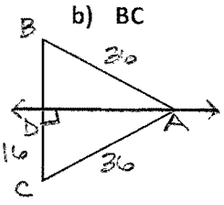
Example 1: Applying the Perpendicular Bisector Theorem and it's Converse.

Find each measure

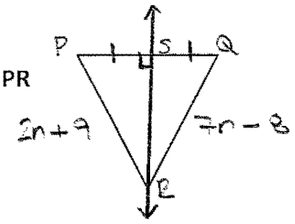
a) YW



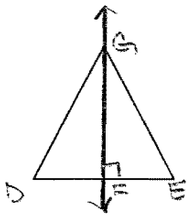
b) BC



c) PR



Check it out! **Find each measure.**



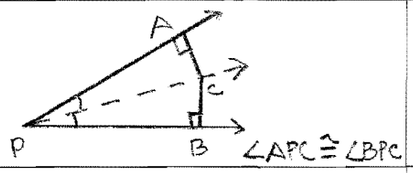
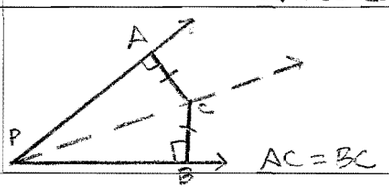
a) Given that line l is the perpendicular bisector of DE and EG = 14.6, find DG.

b) Given that DE = 20.8, DG = 36.4, and EG = 36.4, find EF.

Geometry CC
6.1 - Perpendicular and Angle Bisectors

Name: _____
September 25, 2013

Distance and Angle Bisectors

Theorem	Hypothesis	Conclusion
Angle Bisector Theorem: If a point is on the bisector of an angle, then it is equidistant from the sides of the angle		
Converse of the Angle Bisector Theorem: I a point in the interior of an angle is equidistant from the sides of the angle, then it is on the bisector of the angle.		

Example 2: Applying the Angle Bisector Theorems

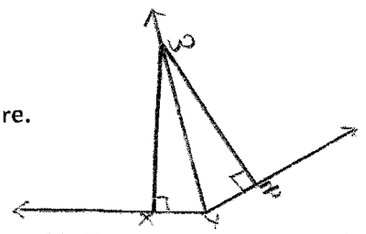
Find each measure.

a) LM

b) $m\angle ABD$, given that $m\angle ABC = 112°$

c) $m\angle TSU$

Check it out! **Find each measure.**



a) Given that $\overline{YW}$ bisects $\angle XYZ$ and WZ = 3.05, find WX.

b) Given that $\angle WYZ = 63°$, XW = 5.7, and ZW = 5.7, find $\angle XYZ$

Example 3: Write an equation in point-slope form, $y - y_1 = m(x - x_1)$, for the perpendicular bisector of the segment with endpoints A(-1, 6) and B(3, 4).