

# Perpendicular and Angle Bisector Theorems Learning Activity

## Part I: The Perpendicular Bisector Theorem



1.) Construct a perpendicular bisector with the given line segment,  $\overline{AB}$ .

Items you need:

- Geometric compass
- Pencil
- Protractor

Construction:



Steps:

1.)

2.)

3.)

4.)

5.)

6.)

2.) On the perpendicular bisector plot a point a point above  $\overline{AB}$  and label it C. Plot a point on the perpendicular bisector and below  $\overline{AB}$  and label it D. Label the intersection of  $\overline{AB}$  and the perpendicular bisector as E. Measure the distances,  $\overline{AE}$  and  $\overline{BE}$  to check.

Find the following distances:

a.)  $\overline{CA}$ :

b.)  $\overline{CB}$

c.)  $\overline{DA}$ :

d.)  $\overline{DB}$ :

Make a conclusion: \_\_\_\_\_

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## Perpendicular and Angle Bisector Theorems Learning Activity

### Part II: The Angle Bisector Theorem

1.) Construct an angle bisector with the given angle,  $\angle A$ .

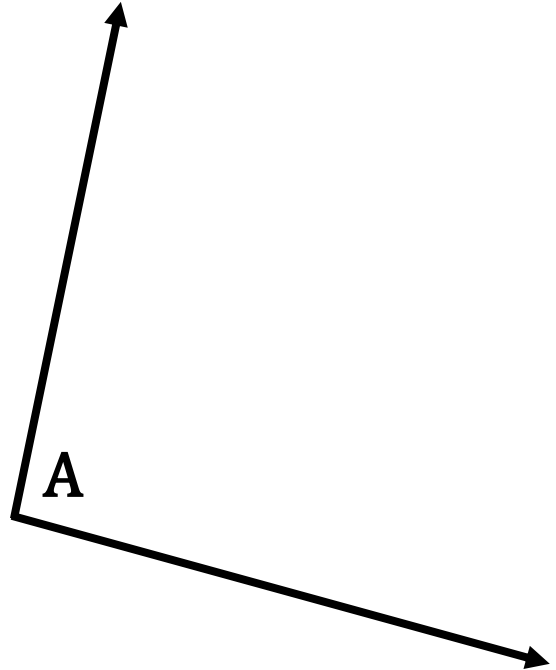
Items you need:

- Compass
- Pencil
- protractor

Construction:

Steps:

- 1.)
- 2.)
- 3.)
- 4.)
- 5.)
- 6.)
- 7.)



2.) On the angle bisector plot a point and label it D. Draw a segment from point D to each side of angle A forming right angles using your protractor. Label these intersections as B and C. Find the measures of  $\angle BAD$  and  $\angle CAD$  to see if your diagram is correct.

Find the following distances: a.)  $\overline{DB}$ :

b.)  $\overline{DC}$ :

Make a conclusion: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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