Name: _____ Date: _____

UNIT 1A **LESSON 4**

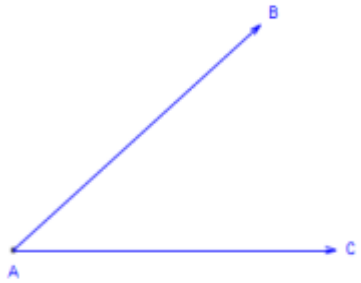
AIM: HOW DO WE BISECT AN ANGLE?

Do Now: Directions: Fill in the matching.

A. Angle
B. Interior Angle
C. Straight angle
D. An angle bisector
E. Exterior Angle (Reflex Angle)

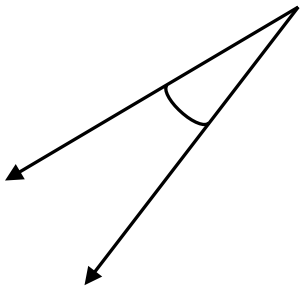
1) _____ Divides an angle into two congruent angles.
2) _____ An angle whose measure is greater than 180, but less than 360.
3) _____ The union of two rays with a common endpoint.
4) _____ An angle whose measure is greater than 0, but less than 180.
5) _____ is a line and measures 180˚

HOW TO BISECT AN ANGLE

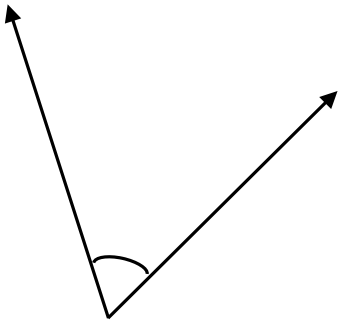
STEPS	CONSTRUCTION	CONCLUSIONS
Start with an angle BAC that we will copy. 1. Place the compasses' point on the angle's vertex A 2. Adjust the compasses to a medium wide setting. **The exact width is not important.** 3. Without changing the compasses' width, draw an arc across each leg of the angle. Label the points of intersection X and Y. 4. You may adjust the compasses width, if necessary. Place the compasses on X draw an arc in the interior of the angle. 5. Without changing the compasses setting repeat for Y so that the two arcs cross. 6. Using a straightedge or ruler, draw a line from the vertex to the point where the arcs cross.		

PRACTICE: Bisect each angle below. Leave all construction marks.

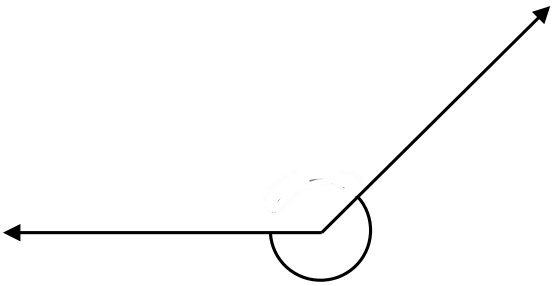
1.



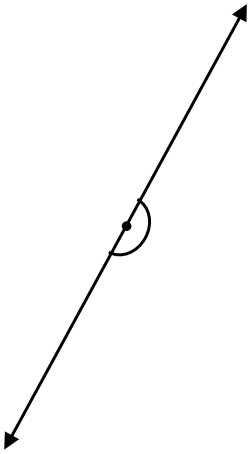
2.



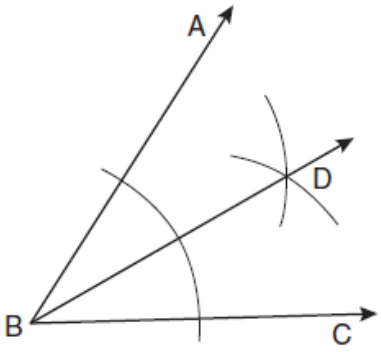
3.



4.



5. Based on the construction below, which statement must be **true**?



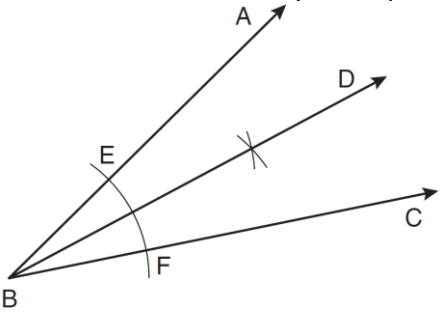
1) $\mathrm{m}\angle ABD = \frac{1}{2}\mathrm{m}\angle CBD$

2) $\mathrm{m}\angle ABD = \mathrm{m}\angle CBD$

3) $\mathrm{m}\angle ABD = \mathrm{m}\angle ABC$

4) $\mathrm{m}\angle CBD = \frac{1}{2}\mathrm{m}\angle ABD$

6. A straightedge and compass were used to create the construction below. Arc *EF* was drawn from point *B*, and arcs with equal radii were drawn from *E* and *F*. Which statement is ***false***?



1) $\mathrm{m}\angle ABD = \mathrm{m}\angle DBC$

2) $\frac{1}{2}(\mathrm{m}\angle ABC) = \mathrm{m}\angle ABD$

3) $2(\mathrm{m}\angle DBC) = \mathrm{m}\angle ABC$

4) $2(\mathrm{m}\angle ABC) = \mathrm{m}\angle CBD$

7. Using a compass and straightedge, construct the bisector of $\angle CBA$. [Leave all construction marks.]