DO NOW

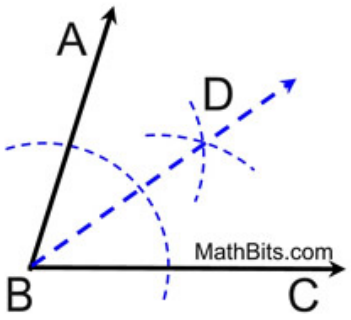
Based on the construction shown at the right, which of the following statements must be true?

a) $m\angle ABD = m\angle CBA$

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

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

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



Sep 24-12:57 PM

Copying an Angle

1. Using a straightedge, draw a reference line, if one is not provided. Place a dot (starting point) on the reference line.

2. Place the point of the compass on the vertex of the given angle, $\angle ABC$ (vertex at point B).

3 Stretch the compass to any length that will stay "on" the angle and swing an arc so the pencil will cross BOTH sides (rays) of the angle.

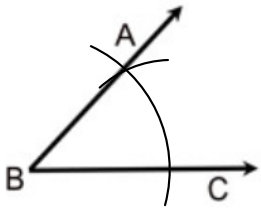
4. Without changing the size of the compass, place the compass point on the starting point (dot) on the reference line and swing an arc that will intersect the reference line and go above the reference line.

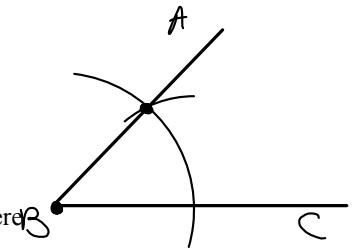
5. Go back to the given angle $\angle ABC$ and measure the span (width) of the arc from where it crosses one side of the angle to where it crosses the other side of the angle. (Place a small arc to show you measured this distance.)

6. Using this width, place the compass point on the reference line where the previous arc crosses the reference line and mark off this new width on your new arc.

7. Connect this new intersection point to the starting point (dot) on your reference line.

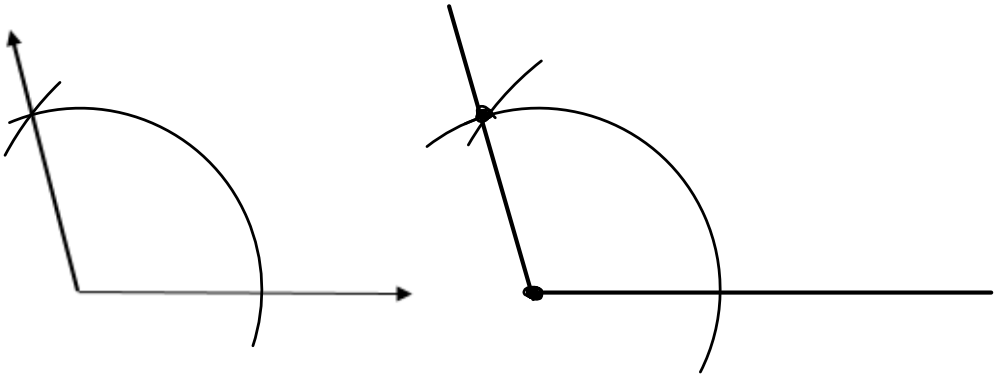
8. Label your copy.





Sep 24-9:54 AM

Copy the given angle:



Sep 24-9:59 AM

Bisecting an Angle

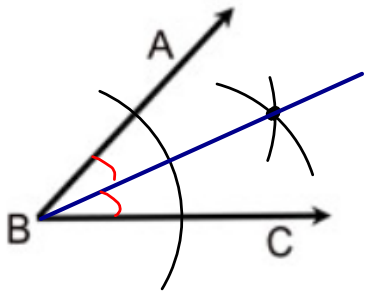
1. Place compass point on the vertex of the angle (point *B*) and stretch the compass to any length that will stay ON the angle.

2. Swing an arc so the pencil crosses both sides (rays) of the given angle. You should now have two intersection points with the sides (rays) of the angle.

3. Place the compass point on one of these new intersection points on the sides of the angle and draw your arc on the interior of the angle.

4. Without changing the span on the compass, place the point of the compass on the other intersection point on the side of the angle and make a similar arc. The two small arcs in the interior of the angle should be intersecting.

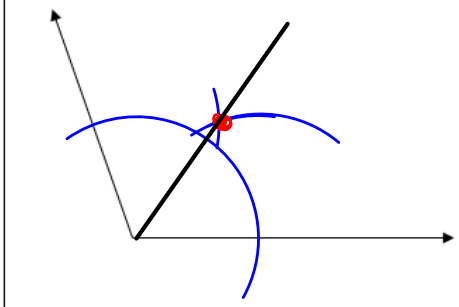
5. Connect the vertex of the angle (point *B*) to this intersection of the two small arcs.



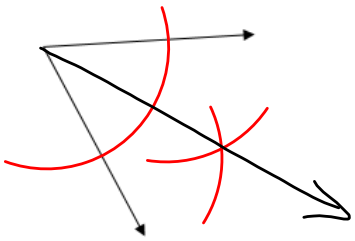
Sep 24-10:02 AM

Bisect the given angles.

1.



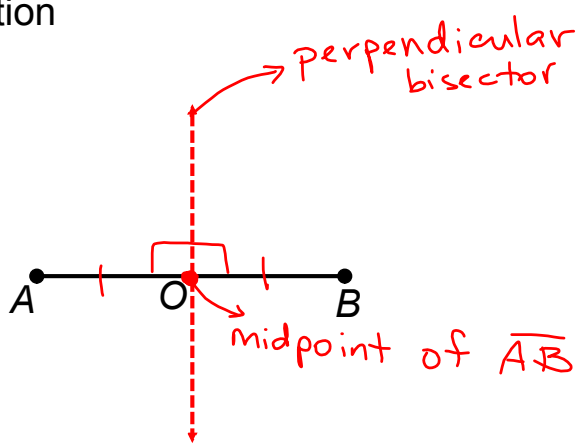
2.



Sep 24-12:46 PM

Perpendicular Bisector of a segment goes through the midpoint of the segment and creates 4 right angles at the point of intersection

creates two ≅ segments



$\overline{AO} \cong \overline{OB}$

Sep 25-9:35 AM

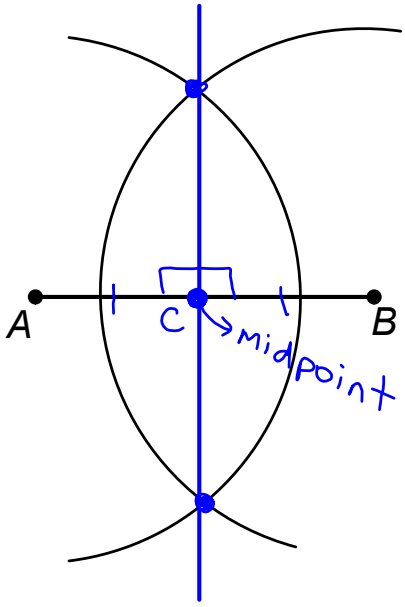
Bisecting a Line Segment (Perpendicular Bisector)

1. Place your compass point on *A* and stretch the compass MORE THAN half way to point *B* (you may also stretch to point *B*).

2. With this length, swing a large arc that will go above and below the line segment

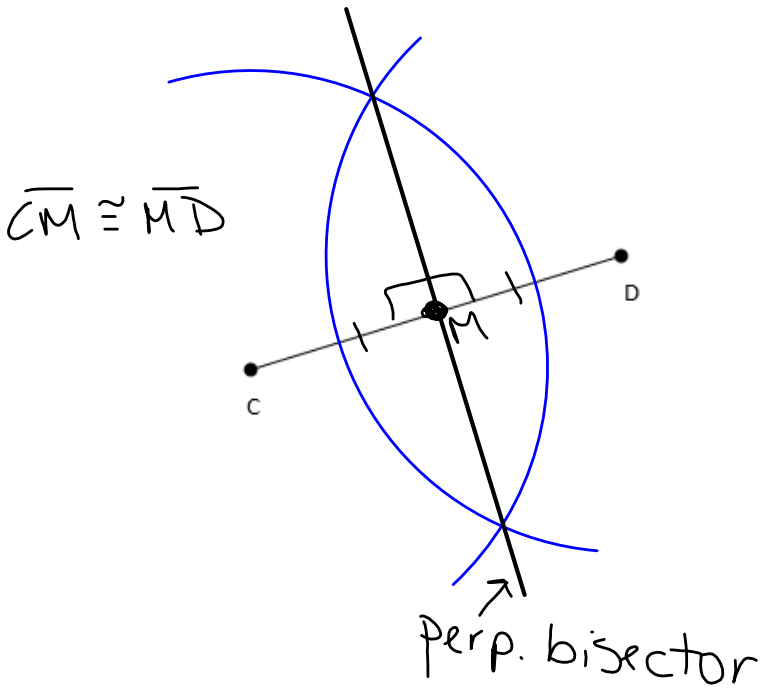
3. Without changing the span on the compass, place the compass point on *B* and swing the arc again. The two arcs should intersect in two locations.

4. Using your straightedge, connect the two points of intersection with a line or segment to locate point *C* which bisects the segment.



Sep 25-9:39 AM

Construct the bisector and label the midpoint of the segment. (M)



Sep 25-9:55 AM