

Name: _____ Date: _____

Geogebra- Rotations Lab

1. Construct a Rotation

**Construct the rotation of $\triangle ABC$
about point P , by $\angle RST$**

Open: <http://tube.geogebra.org/student/b193553>

OR www.geogebra.org

SEARCH: DeRudder Rotations

1. Using the *Angle Measurement* tool (shown below) find the measure of $\angle RST$: _____

* Choose vertices clockwise – $R \rightarrow S \rightarrow T$

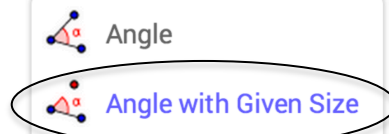


2. Select *Create Angle with Given Size* from the Drop-Down Menu. (shown below)

Select Point A, select the Center of Rotation (point P),

and input the angle of rotation (from in question 1)

What is the name of the new point created? _____



3. Select *Create Angle with Given Size* from the Drop-Down Menu.

Select Point B, select the Center of Rotation, and input the angle of rotation

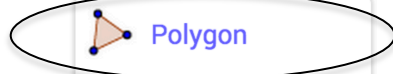
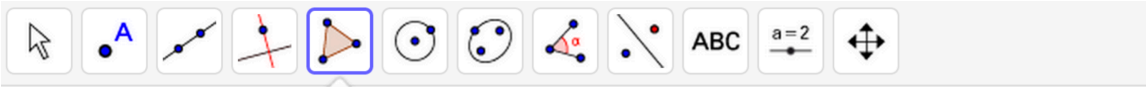
What is the name of the new point created? _____

4. Select *Create Angle with Given Size* from the Drop-Down Menu.

Select point C, select the Center of Rotation, and input the angle of rotation

What is the name of the new point created? _____

5. Using the *Polygon* tool, connect points A' , B' , C' . (And back to A')

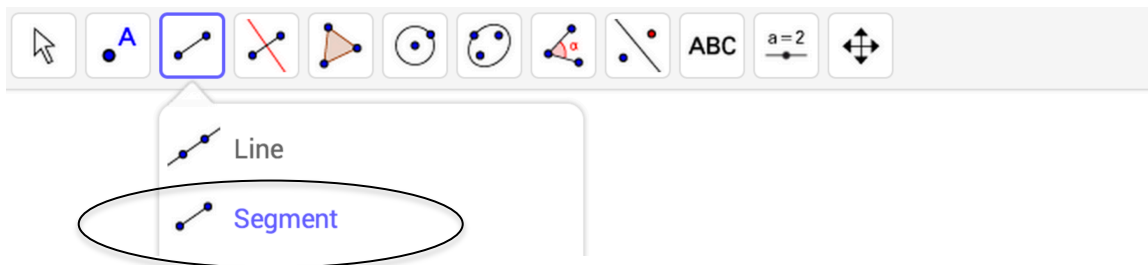


Explain how to or write steps to *Construct a Rotation* on paper using a compass:

2. True or False?

The perpendicular bisectors of any chords on a circle intersect at the center of the circle

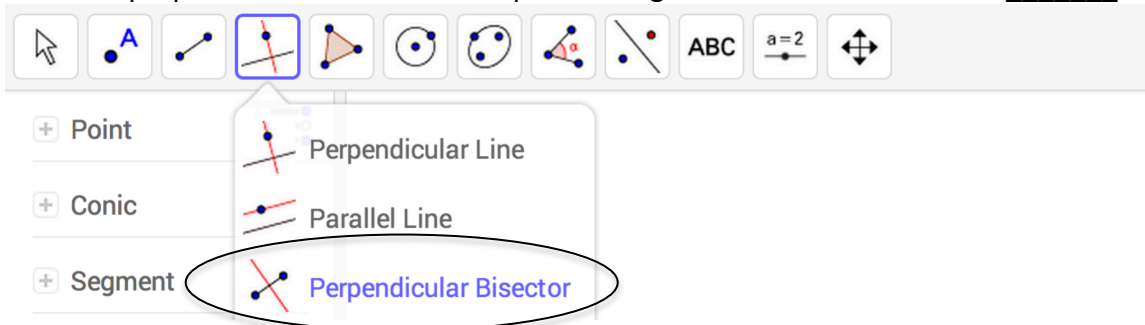
1. Using the *Segment* tool (shown below) construct chords \overline{AB} and \overline{CD}



2. Select *Perpendicular Bisector* from the Drop-Down Menu. (shown below)

Click on chord AB to create the perpendicular bisector of \overline{AB}

Does the perpendicular bisector of \overline{AB} pass through the center of the circle? _____



3. Select *Perpendicular Bisector* from the Drop-Down Menu.

Click on chord CD to create the perpendicular bisector of \overline{CD}

Does the perpendicular bisector of \overline{CD} pass through the center of the circle? _____

What do you think?

What must be true about \overline{AB} and \overline{CD} , for one to be the rotation of the other?

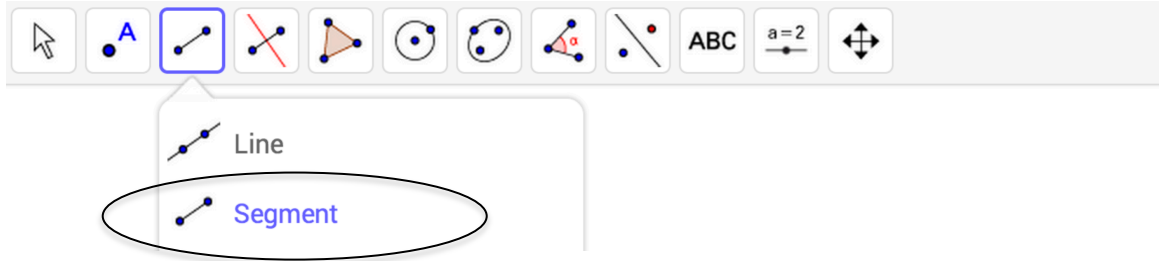
If \overline{CD} is a rotation of \overline{AB} , where is the Center of Rotation?

Explain how to or write steps to *find the Center of a Circle* on paper using a compass:

3. Finding the Center of Rotation

*How can you find the center of rotation,
given that $\triangle A'B'C'$ is a rotation of $\triangle ABC$*

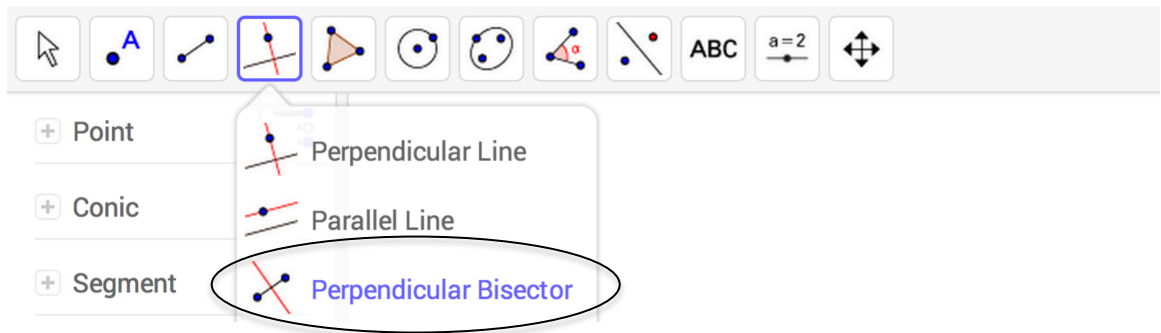
1. Using the *Segment* tool (shown below) construct chord $\overline{AA'}$



2. Select *Perpendicular Bisector* from the Drop-Down Menu. (shown below)

Click on segment $\overline{AA'}$ to create the perpendicular bisector of $\overline{AA'}$

Should the perpendicular bisector of $\overline{AA'}$ pass through the center of rotation? Yes/No



3. Repeat Steps 1 and 2 to construct the perpendicular bisectors of $\overline{BB'}$ and $\overline{CC'}$

Should the perpendicular bisector of $\overline{BB'}$ pass through the center of rotation? Yes/No

Should the perpendicular bisector of $\overline{CC'}$ pass through the center of rotation? Yes/No

What do you think?

Where is the center of rotation? _____

How could you verify this? _____

Explain how to or write steps to find the *Center of Rotation* on paper using a compass:

Name: _____ Date: _____

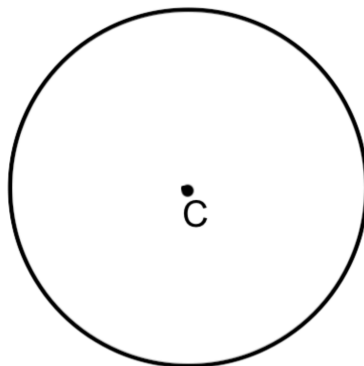
Geogebra- Rotations Lab

Rotations – Practice

1. **Construct the rotation** of \overline{AB} about point P , by $\angle MNO$



2. **Is C the Center of the Circle?** Yes or No. _____



3. **Find the Center of Rotation by Construction.**

Given:
 $L'M'N'O'$ is a rotation of $LMNO$

