☐ **DO NOW – Geometry Regents Lomac 2014-2015** **Date** 10/7 **due** 10/8 **Circles, Symmetry, Perpendicular Bisectors, and Reflection** | **2.2**

(DN) Write anything that comes to mind when you hear or see the word ***reflection***.

Name _____**Per**_____

SLO: I can describe the relationship between circles, perpendicular bisectors, and reflection.

☐ (1) paper circle 2.2 **Folding Circles:**

☐ (a) Obtain the "Paper Circle 2.2" page

☐ (b) On the circle, find point A and point A'. Fold the paper so that point A' coincides with point A and crease the paper. With the paper creased, hold it up to the light. How much of the circle do you see? _____ Unfold the paper and use a straightedge and pencil to trace the crease you made.

☐ (c) On the circle, find point B and point B'. Fold the paper so that point B' coincides with point B and crease the paper. With the paper creased, hold it up to the light. How much of the circle do you see? _____ Unfold the paper and use a straightedge and pencil to trace the crease you made.

☐ (d) Repeat the steps in part (b) and (c) above with points C and C' and D and D'.

☐ (e) You have traced 4 creases and should have 4 line segments that connect points that are on the circle. These 4 line segments with endpoints on the circle all pass through the _____ of the circle. Segments with endpoints on the circle that pass through the _____ are called _____.

☐ (3) paper circle 2.2 **Folding Circles take 2:**

☐ (a) Obtain the "Circle Reflection 2.2" page.

☐ (b) The first circle has points A and A' marked. Fold the paper so that point A' coincides with point A and crease the paper. Unfold the paper and use a straightedge and pencil to trace the crease. Mark the points where the crease intersects the circle and label them D and R. $\overline{DR}$ is the _____ of the circle.

☐ (c) Use a straightedge to connect A' to point A. Mark the intersection of $\overline{DR}$ and $\overline{AA'}$ and label it M. A' is a _____ of A across _____ because A and A' coincide when we folded the paper. We also know that $\overline{A'M}$ is a reflection of _____ across _____ because the segments _____ when we fold the paper. We also know that $\angle$A'MR is a _____ of _____ across _____ because the angles _____ when we fold the paper. Because $\angle$A'MA is a _____ angle it measures _____ so $\angle$A'MR and $\angle$AMR are both _____. This makes $\overline{DR}$ the _____ _____ of $\overline{AA'}$. Verify this by repeating the process for B and B', C and C', and D and D'.

☐ **BIG IDEAS: (1) The line of reflection that maps a point on a circle to its reflected image on the circle will be a _____ of the circle. (2) The line of reflection is also the _____ _____ of the segment connecting the original point on the circle to its reflected image on the circle.**

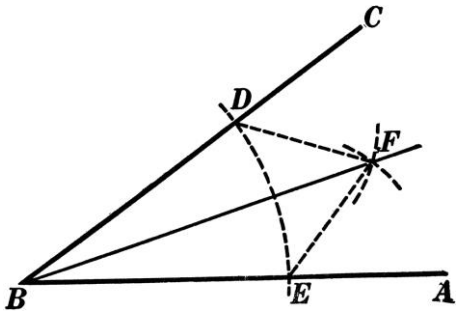
☐ (3) **Exit Ticket**

☐ (a) Describe the relationship between circles, perpendicular bisectors, and reflection. You may want to use a compass and straightedge to make a construction that supports your description

☐ (4) **Homework**

☐ (1) Draw and label two segments AB and CD. Construct the perpendicular bisector for each segment.

☐ (2) Below is a construction of an angle bisector. Complete the full circle for circle B. Draw line segment DE.



Use what you learned about circles, diameters, and segments to explain how you know that the angle bisector, ray BF, is also the perpendicular bisector of line segment DE.

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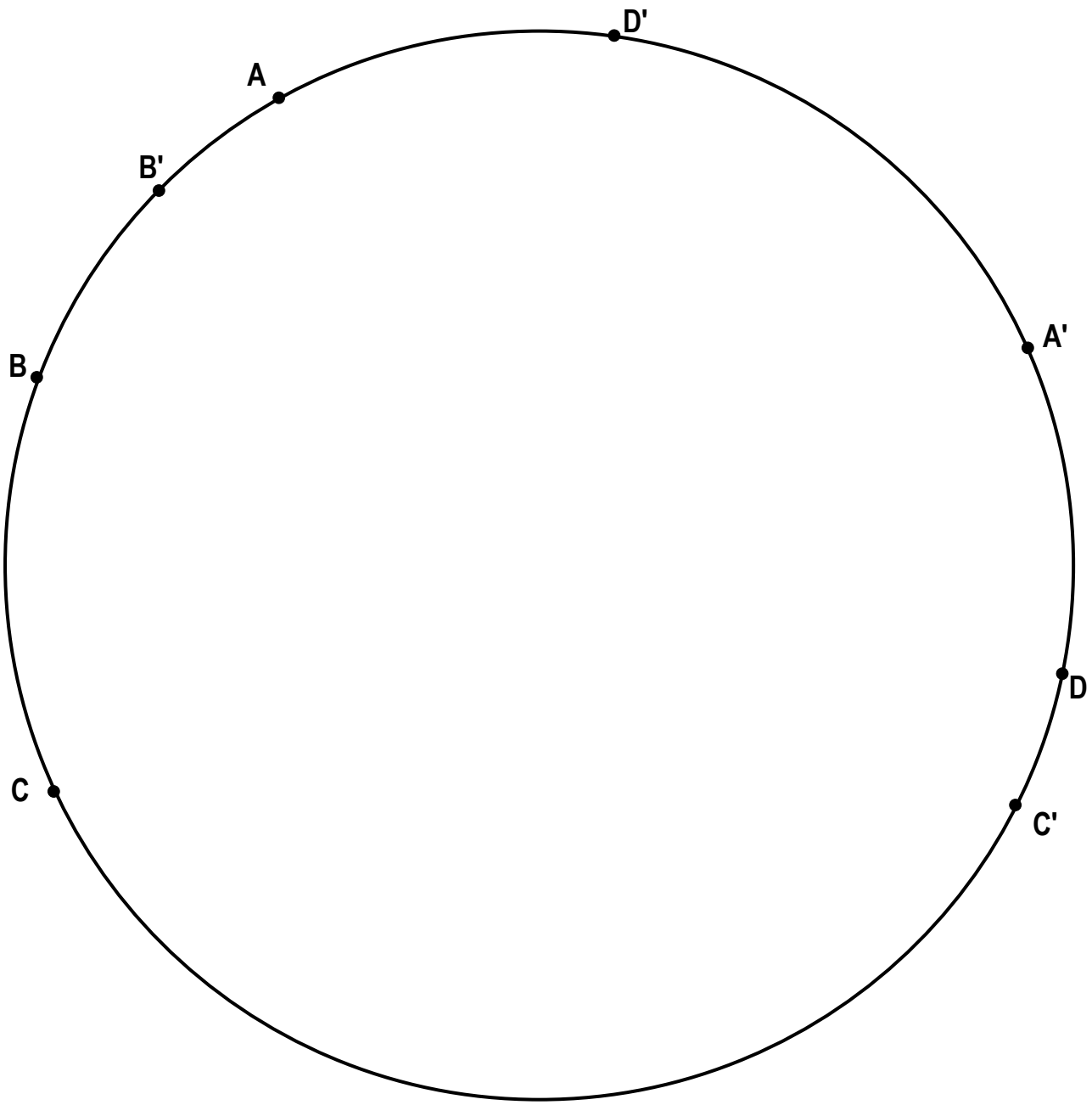
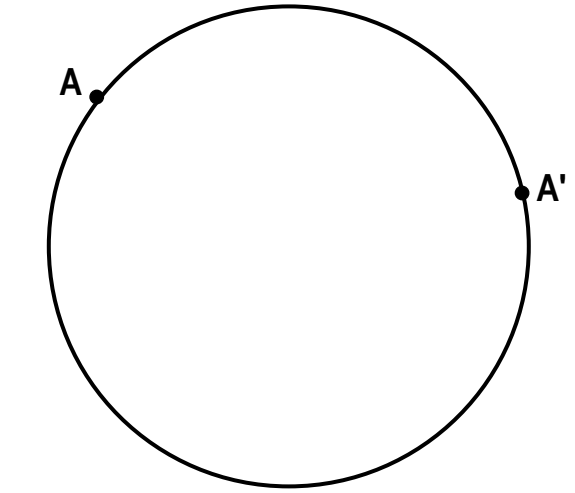
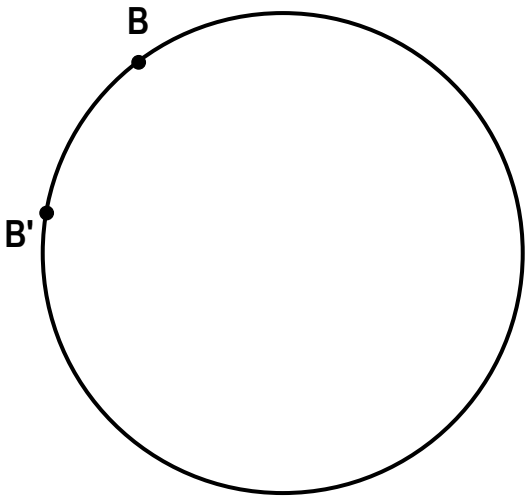
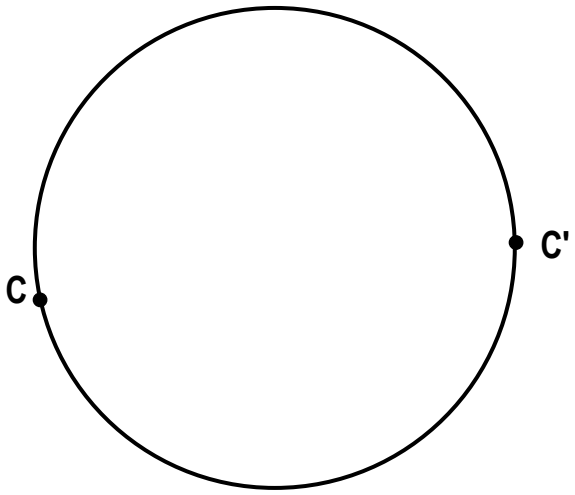
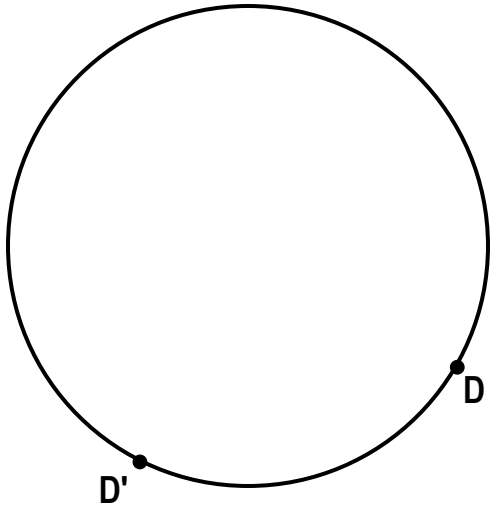

D'
A
B'
A'
B
D
C
C'


A
A'


B
B'


C
C'


D
D'