Geometry Regents Lomac 2015-2016   Date 10/2   due 10/5   Circles and Lines of Reflection │ **2.2R**

☐ **DO NOW –** On the back of this packet

Name _____

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

☐ (1)   **Folding Circles:**

paper
circle 2.2   ☐ (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 _____.

☐ (2)   **Folding Circles take 2:**

circle
reflection
2.2   ☐ (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 ∠A'MR is a _____ of _____ across _____ because the angles _____ when we fold the paper. Because ∠A'MA is a _____ angle it measures _____ so ∠A'MR and ∠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 _____ ___ _____ is also the _____ _____ of the segment connecting the original point on the circle to its reflected image on the circle.**
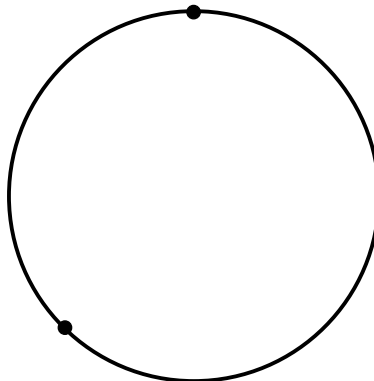
☐ (3) **Exit Ticket**

ON THE LAST PAGE

☐ (4) **Homework**

☐ (1) Construct the perpendicular bisector of AB and label it CD.

A

B
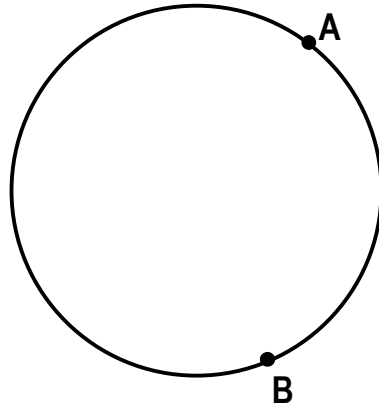
☐ (2) Construct the line of reflection that maps E to F and label the line LR.

E

F
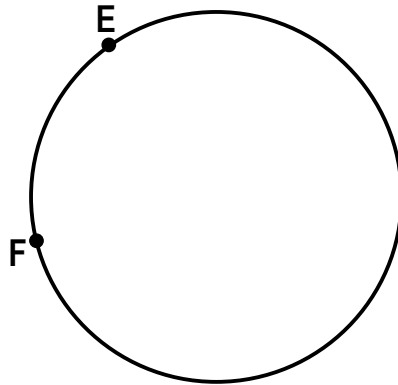
☐ (3) Construct a diameter of the circle below and label its endpoints D and R.

☐ (4)   **Homework**

cont,   ☐ (4) Draw obtuse angle AXE with a straightedge and construct the bisector of the angle.
compass
highligh-
ters

☐ (5) Draw and label acute angle COW with a straightedge and construct a copy of the angle.
      Label the copy C'O'W'.

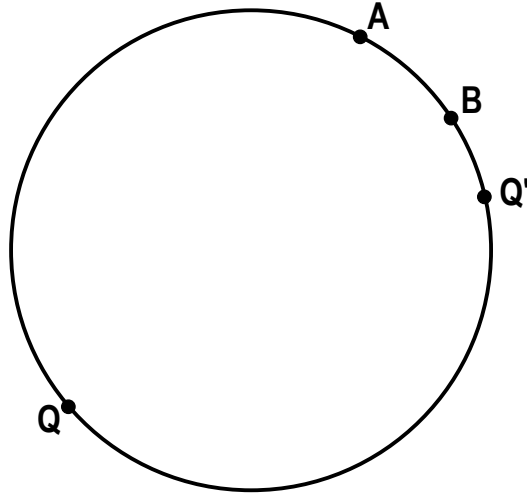☐ (6) Draw a reflection (A') , a rotation (A"), and translation (A"') of figure A below.

A
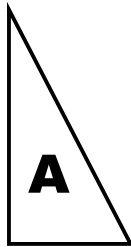
Exit Ticket   Name_____ Date _____ _____ Per_ _____   2.2R

(1) The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following:

☐ (a) Construct the perpendicular bisector of the segment that connects point Q to point Q'.

A

B

Q'

Q

☐ (b) Mark the points where the perpendicular bisector you constructed intersects the circle and label the points L and R.

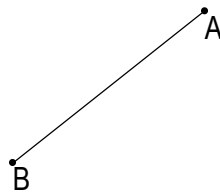☐ (c) In addition to being part of the perpendicular bisector of QQ', LR is also

_____

and _____

☐ (d) If you construct it, the perpendicular bisector of AB will intersect LR at _____

DO NOW   Name_____ **Date** _____ **Per**_____   **2.2R**

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

(2) Construct the perpendicular bisector of AB.

A

B

(3) Does "**reflection**" pertain to (relate to) anything in your construction for part (2)?

(3) What does the image below say? Turn your paper over – left to right – and hold it up to the light. Now what does it say?
    Describe anything you notice.

D'

A

B'

A'

B

D

C

C'