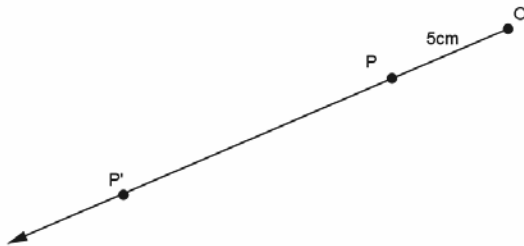Name _____   Date_____

# Lesson 1: What Lies Behind "Same Shape"?

Exit Ticket

1.   Why do we need a better definition for similarity than "same shape, not the same size"?

2.   Use the diagram below. Let there be a dilation from center O with scale factor $r = 3$. Then, $Dilation(P) = P'$. In the diagram below, $|OP| = 5$ cm. What is $|OP'|$? Show your work.

3.   Use the diagram below. Let there be a dilation from center O. Then, $Dilation(P) = P'$. In the diagram below, $|OP| = 18$ cm and $|OP'| = 9$ cm. What is the scale factor r? Show your work.
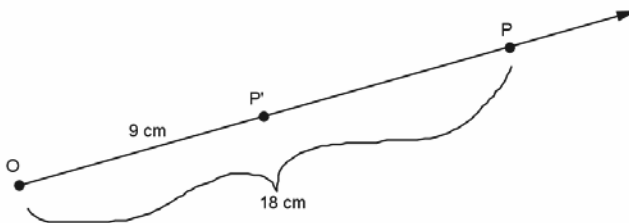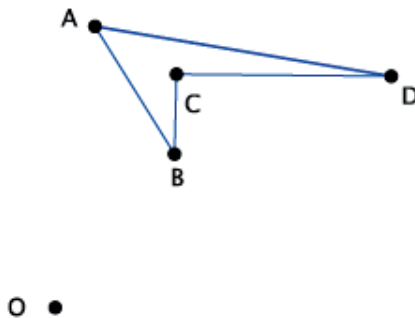
Name _____   Date_____

Lesson 2: Properties of Dilations

Exit Ticket

1. Given center O and quadrilateral $ABCD$, using a compass and ruler, dilate the figure from center O by a scale factor of $r = 2$. Label the dilated quadrilateral $A'B'C'D'$.

2. Describe what you learned today about what happens to lines, segments, rays, and angles after a dilation.
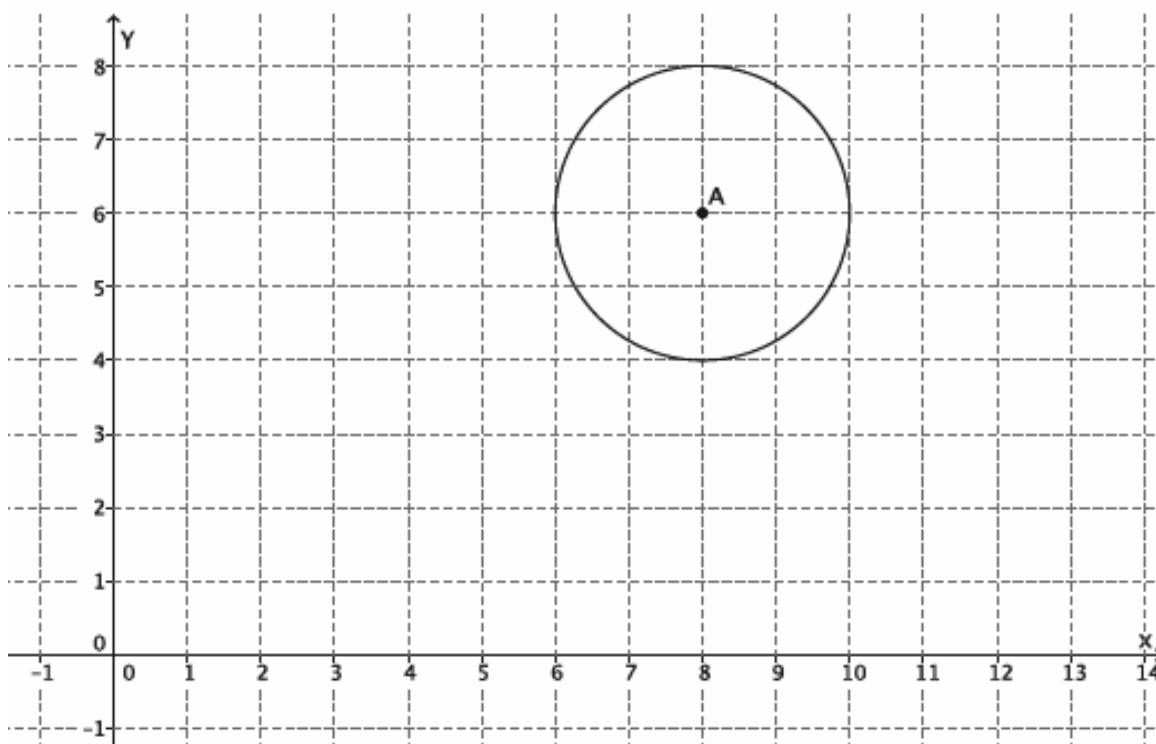
Name _____   Date_____

Lesson 3: Examples of Dilations

Exit Ticket

1. Dilate circle A from center O by a scale factor $r = \frac{1}{2}$. Make sure to use enough points to make a good image of the original figure.

2. What scale factor would magnify the dilated circle back to the original size of circle A? How do you know?
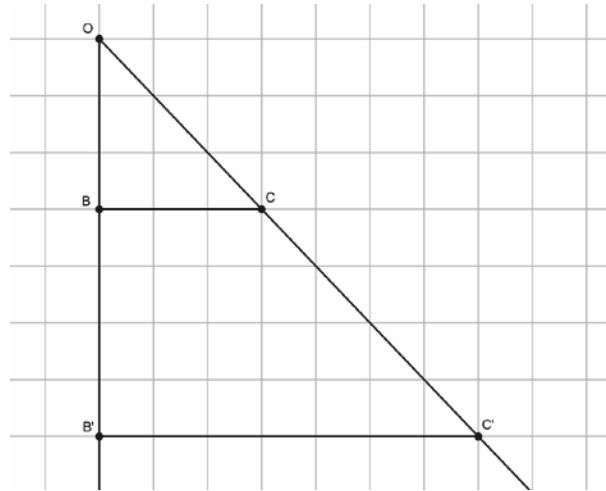
Name _____ Date_____

Lesson 4: Fundamental Theorem of Similarity (FTS)

Exit Ticket

Steven sketched the following diagram on graph paper. He dilated points B and C from point O. Answer the following questions based on his drawing.

1. What is the scale factor r? Show your work.

2. Verify the scale factor with a different set of segments.

3. Which segments are parallel? How do you know?

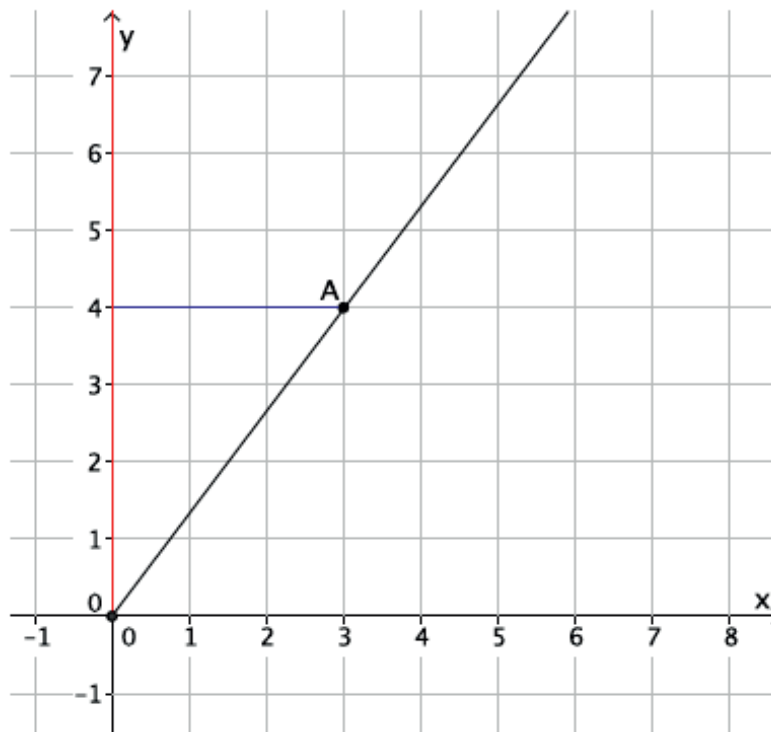4. Are $\angle OBC$ and $\angle OB'C'$ right angles? How do you know?

Name _____   Date_____

Lesson 5: First Consequences of FTS

Exit Ticket

In the diagram below, you are given center O and ray $\overrightarrow{OA}$. Point A is dilated by a scale factor $r = \frac{6}{4}$. Use what you know about FTS to find the location of point A'.
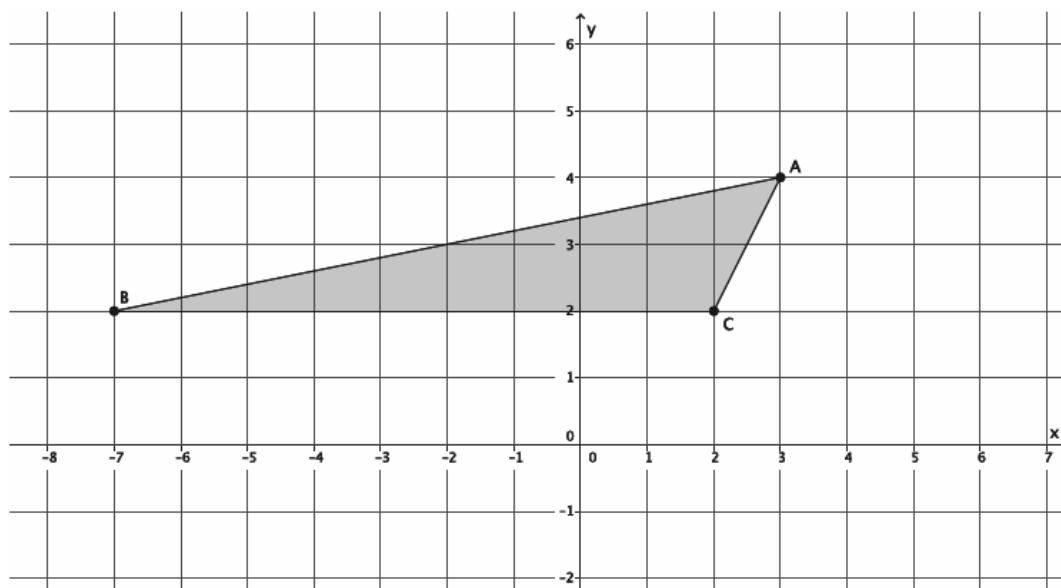
Name _____   Date _____

Lesson 6: Dilations on the Coordinate Plane

Exit Ticket

1. The point $A(7, 4)$ is dilated from the origin by a scale factor $r = 3$. What are the coordinates of point A'?

2. The triangle ABC, shown on the coordinate plane below, is dilated from the origin by scale factor $r = \frac{1}{2}$. What is the location of triangle $A'B'C'$? Draw and label it on the coordinate plane.
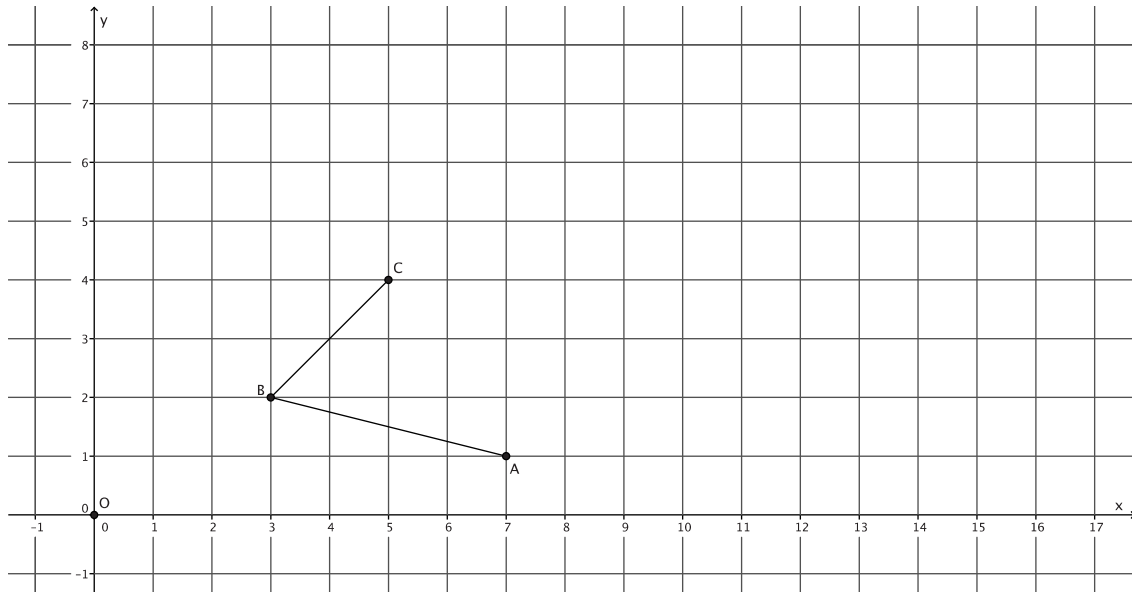
Name _____   Date_____

Lesson 7: Informal Proofs of Properties of Dilations

Exit Ticket

Dilate $\angle ABC$ with center O and scale factor $r = 2$. Label the dilated angle, $\angle A'B'C'$.

1. If $\angle ABC = 72°$, then what is the measure of $\angle A'B'C'$?

2. If the length of segment AB is 2 cm, what is the length of segment $A'B'$?

3. Which segments, if any, are parallel?