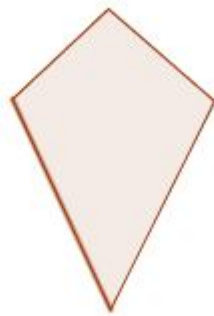


Name _____

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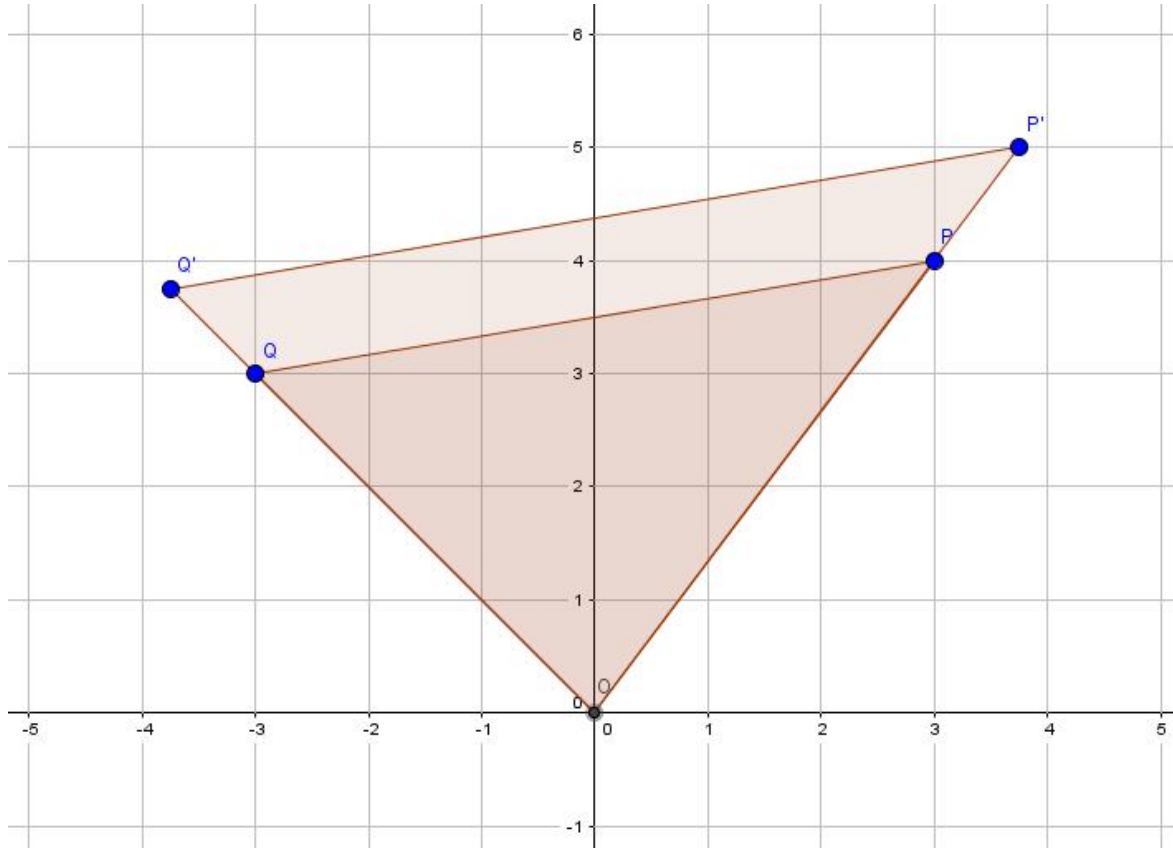
1. Use the figure below to complete parts (a) and (b).



- a. Use a compass and ruler to produce an image of the figure with center O and scale factor $r = 2$.
- b. Use a ruler to produce an image of the figure with center O and scale factor $r = \frac{1}{3}$.

2. Use the diagram below to answer the questions that follow.

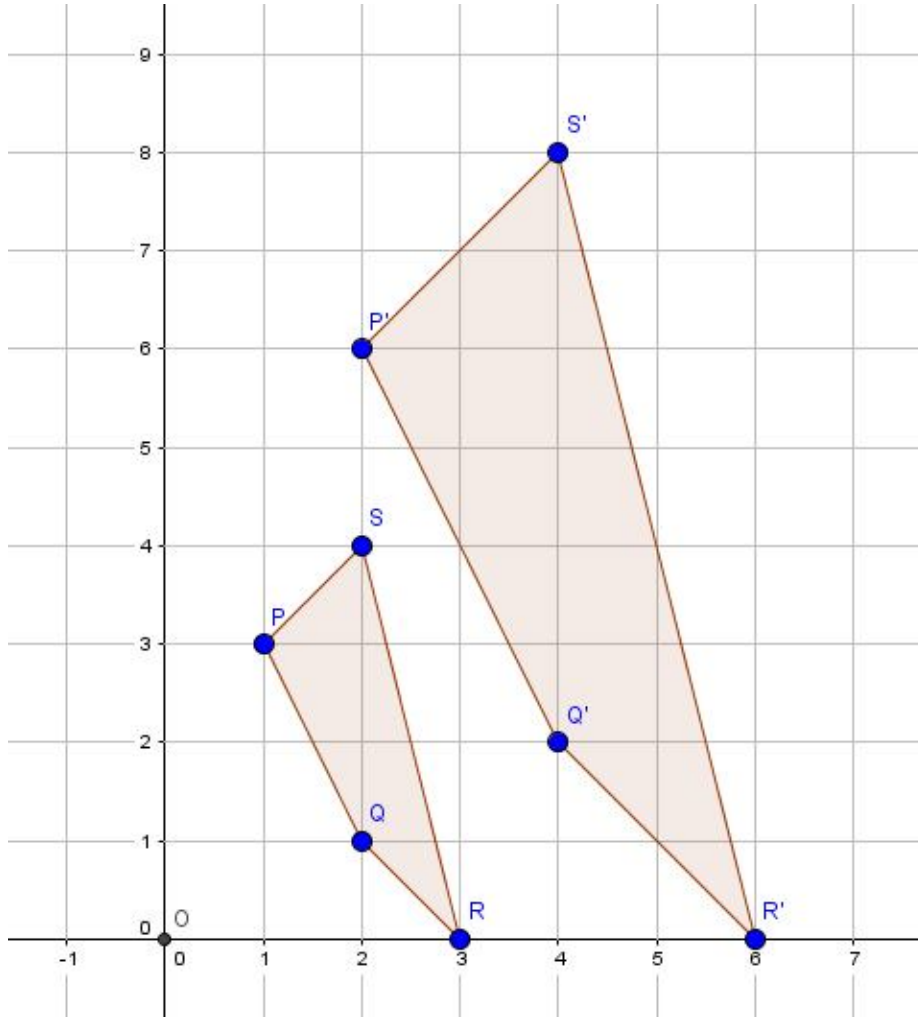
Let D be the dilation with center O and scale factor $r > 0$ so that $Dilation(P) = P'$ and $Dilation(Q) = Q'$.



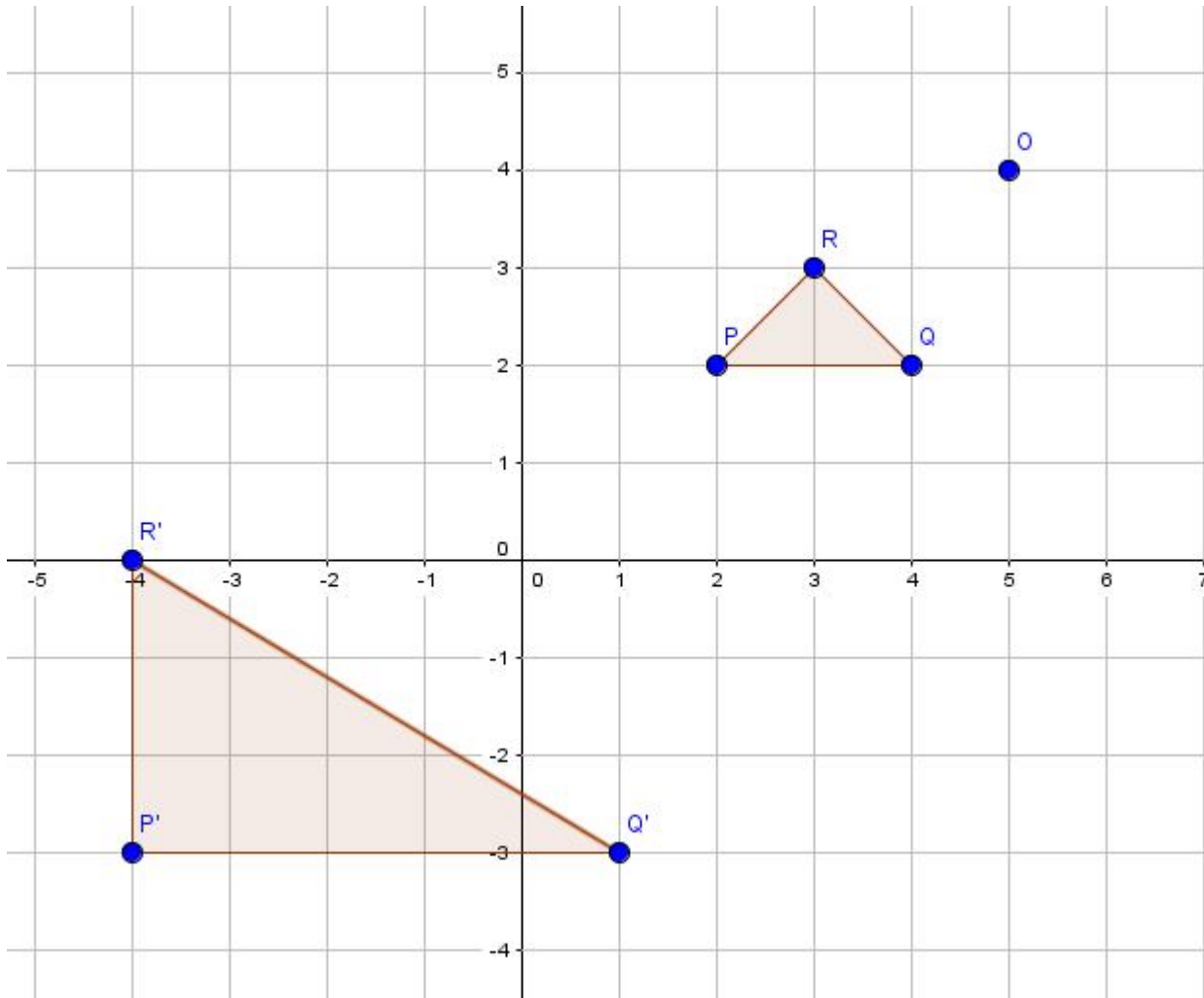
- a. Use lengths $|OQ| = 8$ units and $|OQ'| = 10$ units to determine the scale factor r of dilation D . Describe how to determine the coordinates of P' using the coordinates of P .
- b. If $|OQ| = 8$ units, $|OQ'| = 10$ units, and $|P'Q'| = 9.5$ units, determine $|PQ|$. Round your answer to the tenths place, if necessary.

3. Use a ruler and compass, as needed, to answer parts (a) and (b).

a. Is there a dilation D with center O that would map figure $PQRS$ to figure $P'Q'R'S'$? Explain in terms of scale factor, center, and coordinates of corresponding points.



- b. Is there a dilation D with center O that would map figure PQR to figure $P'Q'R'$? Explain in terms of scale factor, center, and coordinates of corresponding points.



- c. Triangle ABC is located at points $A(-2, 4)$, $B(1, 3)$, and $C(3, -1)$ and has been dilated from the origin by a scale factor of 2. Draw and label the vertices of triangle ABC . Determine the coordinates of the dilated triangle $A'B'C'$, and draw and label it on the coordinate plane.

