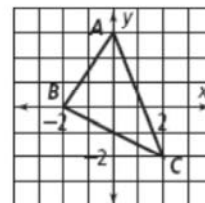
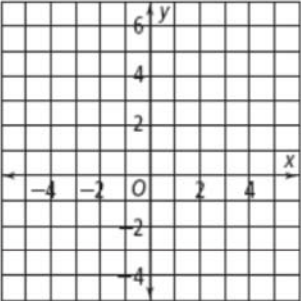


9.6A Notes

The column on the left shows the steps used to graph a dilation. Use the column on the left to answer each question in the column on the right.



<p>Problem Graphing a Dilation</p> <p>What are the images of the vertices of $\triangle ABC$ for a dilation centered at the origin with a scale factor of $n = 2$? Graph the image of $\triangle ABC$.</p>	<p>1. Read the example. What do you need to find to solve the problem?</p> <p><u>the coordinates of the vertices for</u> _____</p> <p><u>the dilation</u> _____</p>
<p>Identify the coordinates of each vertex of $\triangle ABC$.</p> <p>$A(0, 3), B(-2, 0), C(2, -2)$</p>	<p>2. The dilation center is the origin. What are the coordinates of the origin?</p> <p>_____ <u>(0, 0)</u> _____</p>
<p>Use the dilation rule where n is the scale factor.</p> <p>$D_n(x, y) = (nx, ny)$</p> <p>$D_2(x, y) = (2x, 2y)$</p>	<p>3. What is a dilation rule for a transformation?</p> <p><u>a rule that describes how to map a preimage onto its image</u></p>
<p>Find the images of $A, B,$ and C.</p> <p>$D_2(A) = (2 \cdot 0, 2 \cdot 3),$ or $A'(0, 6)$</p> <p>$D_2(B) = (2 \cdot (-2), 2 \cdot 0),$ or $B'(-4, 0)$</p> <p>$D_2(C) = (2 \cdot 2, 2 \cdot (-2)),$ or $C'(4, -4)$</p>	<p>4. How was the rule used to find the images of each vertex?</p> <p><u>The coordinates of the vertex were substituted into the rule to find the coordinates of the image.</u></p>
<p>Graph $A', B',$ and C'. Then draw $\triangle A'B'C'$.</p> 	<p>5. What does it mean to graph a point?</p> <p><u>to plot the point on a coordinate grid</u></p> <p>6. Use the grid to the left to graph $A', B',$ and C' and draw $\triangle A'B'C'$.</p>

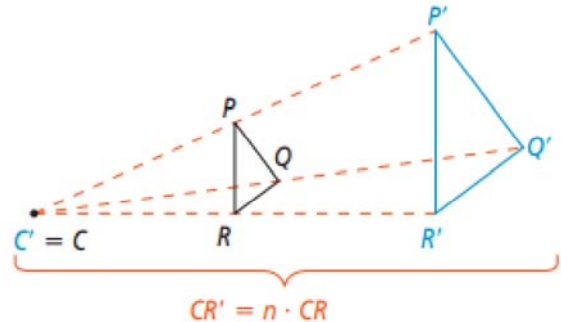
9.6B Notes

Take note

Key Concept Dilation

A dilation with center of dilation C and scale factor n , $n > 0$, can be written as $D_{(n, C)}$. A dilation is a transformation with the following properties:

- The image of C is itself (that is, $C' = C$).
- For any other point R , R' is on \overrightarrow{CR} and $CR' = n \cdot CR$, or $n = \frac{CR'}{CR}$.
- Dilations preserve angle measure.



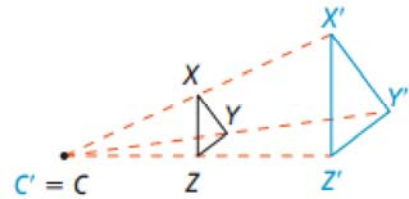
5. Circle the equation that is true for the dilation shown to the right.

$$n = \frac{CX}{CX'}$$

$$n = \frac{CX'}{CX}$$

$$n = \frac{CY}{CY'}$$

$$n = \frac{CY'}{CY}$$



Problem 1 Finding a Scale Factor

Got It? Is $D(n, O)(JKLM) = J'K'L'M'$ an enlargement or a reduction?
What is the scale factor of the dilation?

Underline the correct choice to complete the sentence.

6. The image $J'K'L'M'$ is larger / smaller than the preimage $JKLM$.

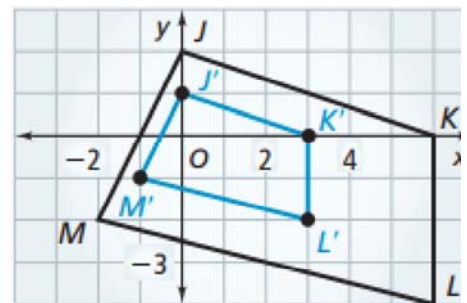
7. The image $J'K'L'M'$ is a(n) enlargement / reduction.

8. Fill in the blanks to identify the coordinates of the preimage $JKLM$.

J (,), K (,), L (,), M (,),

9. Fill in the blanks to identify the coordinates of the image $J'K'L'M'$.

J' (,), K' (,), L' (,), M' (,),



10. Fill in the blanks to complete the sentence.

The scale factor of the dilation is $n = \frac{K'L'}{KL} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$