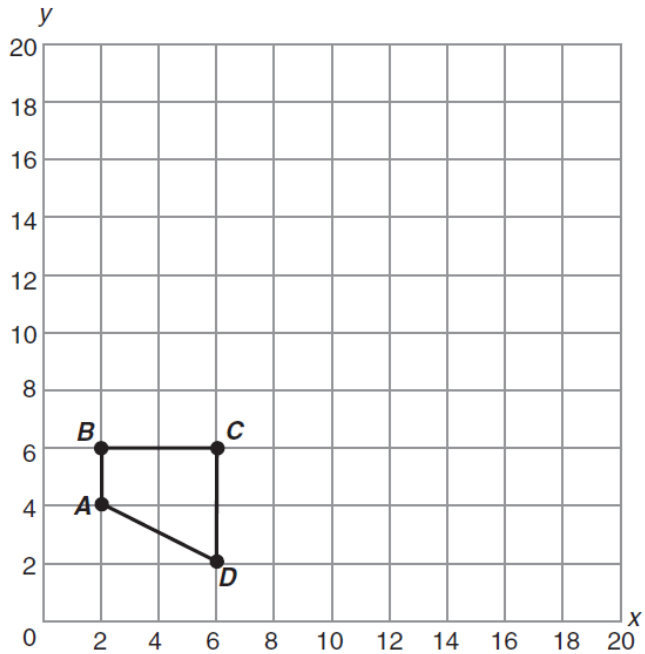


6.1 – Dilating Triangles to Create Similar Triangles

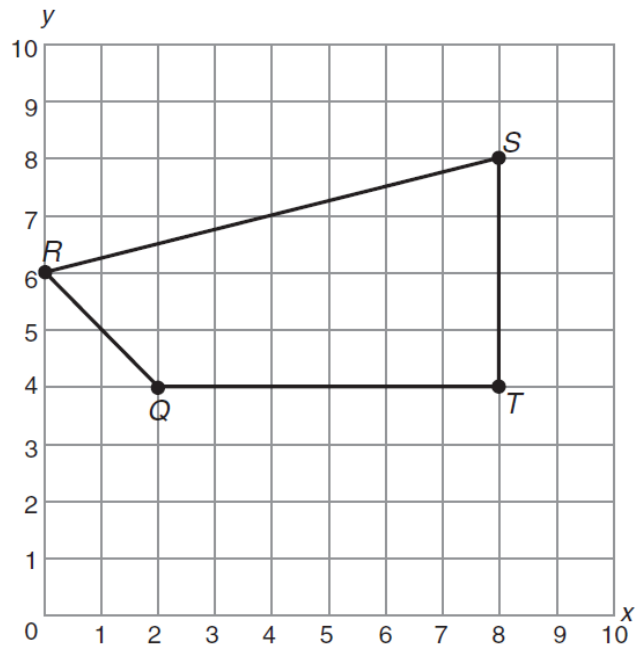
1. Use quadrilateral $ABCD$ shown on the grid to complete parts a and b.

- a. On the grid, draw the image of quadrilateral $ABCD$ dilated using a scale factor of 3 with the center of dilation at the origin. Label the image $JKLM$.
- b. What are the coordinates of the vertices of $JKLM$?

- c. On the grid, draw the image of quadrilateral $ABCD$ dilated using a scale factor of 0.5 with the center of dilation at the origin. Label the image $WXYZ$.
- d. What are the coordinates of the vertices of $WXYZ$?



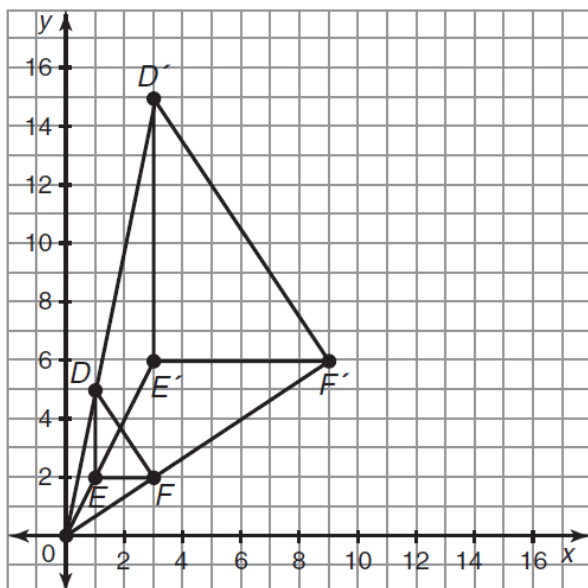
2. On the grid, draw the image of quadrilateral $QRST$ using the dilation $(x, y) \rightarrow (0.75x, 0.75y)$. Label the image $Q'R'S'T'$. What are the coordinates of the vertices of quadrilateral $Q'R'S'T'$?



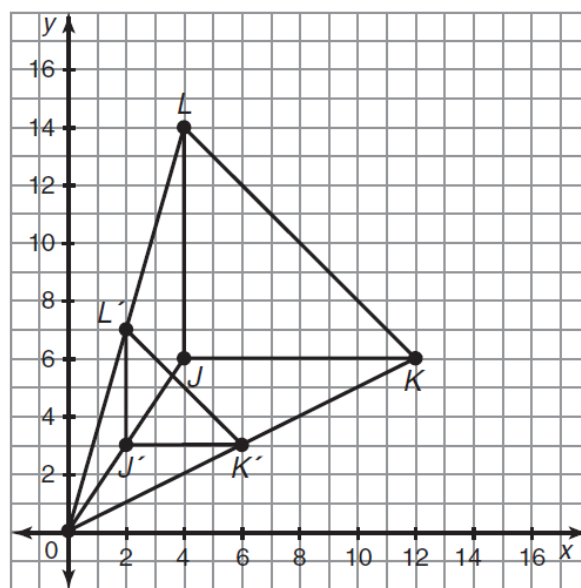
3. Under a dilation, triangle $A(0, 0), B(0, 4), C(6, 0)$ becomes triangle $A'(0, 0), B'(0, 10), C'(15, 0)$. What is the scale factor for this dilation? Show how you obtained your answer.

Given the image and pre-image, determine the scale factor. Is the dilation a reduction or an enlargement? Show how you obtained your answer.

4.



5.



Use coordinate notation $(x, y) \rightarrow (kx, ky)$ to determine the coordinates of the image.

6. $\triangle ABC$ has vertices $A(1, 2)$, $B(3, 6)$, & $C(9, 7)$. What are the vertices of the image after a dilation with a scale factor of 4 using the origin as the center of dilation?
7. $\triangle DEF$ has vertices $D(8, 4)$, $E(14, 16)$, & $F(6, 10)$. What are the vertices of the image after a dilation with a scale factor of $\frac{1}{2}$ using the origin as the center of dilation?
8. $\triangle JKL$ has vertices $J(-6, 15)$, $K(0, 5)$, & $L(3, 10)$. What are the vertices of the image after a dilation with a scale factor of $\frac{1}{3}$ using the origin as the center of dilation?
9. The vertices of trapezoid $WXYZ$ are $W(-1, 2)$, $X(-3, -1)$, $Y(5, -1)$, & $Z(3, 2)$. What are the vertices of the image after a dilation with a scale factor of 5 using the origin as the center of dilation?
10. The vertices of hexagon $PQRSTV$ are $P(-5, 0)$, $Q(-5, 5)$, $R(0, 7)$, $S(5, 2)$, $T(5, -2)$ & $V(0, -5)$. What are the vertices of the image after a dilation with a scale factor of 4.2 using the origin as the center of dilation?