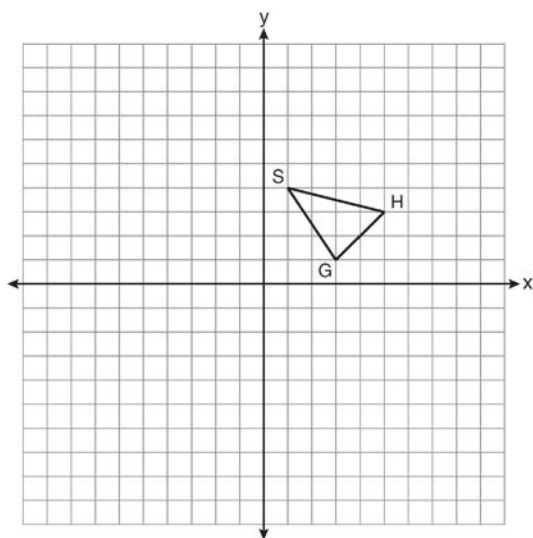


G.G.58: Compositions of Transformations: Define, investigate, justify, and apply similarities (dilations and the composition of dilations and isometries)

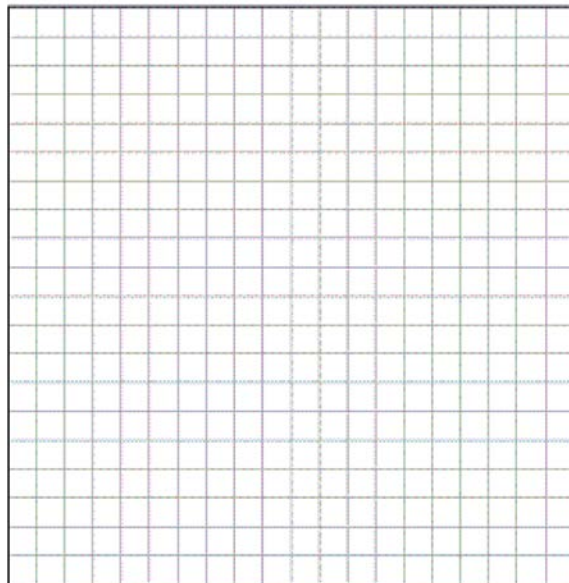
- 1 The endpoints of \overline{AB} are $A(3, 2)$ and $B(7, 1)$. If $\overline{A''B''}$ is the result of the transformation of \overline{AB} under $D_2 \circ T_{-4, 3}$ what are the coordinates of A'' and B'' ?

- 1) $A''(-2, 10)$ and $B''(6, 8)$
- 2) $A''(-1, 5)$ and $B''(3, 4)$
- 3) $A''(2, 7)$ and $B''(10, 5)$
- 4) $A''(14, -2)$ and $B''(22, -4)$

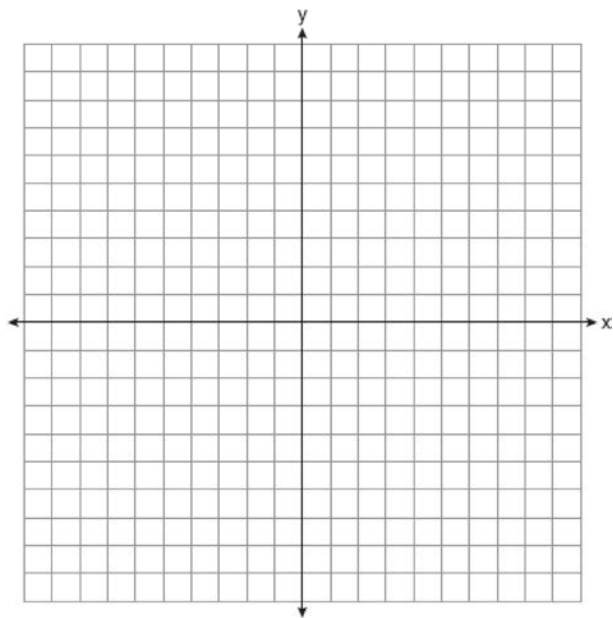
- 2 As shown on the set of axes below, $\triangle GHS$ has vertices $G(3, 1)$, $H(5, 3)$, and $S(1, 4)$. Graph and state the coordinates of $\triangle G''H''S''$, the image of $\triangle GHS$ after the transformation $T_{-3, 1} \circ D_2$.



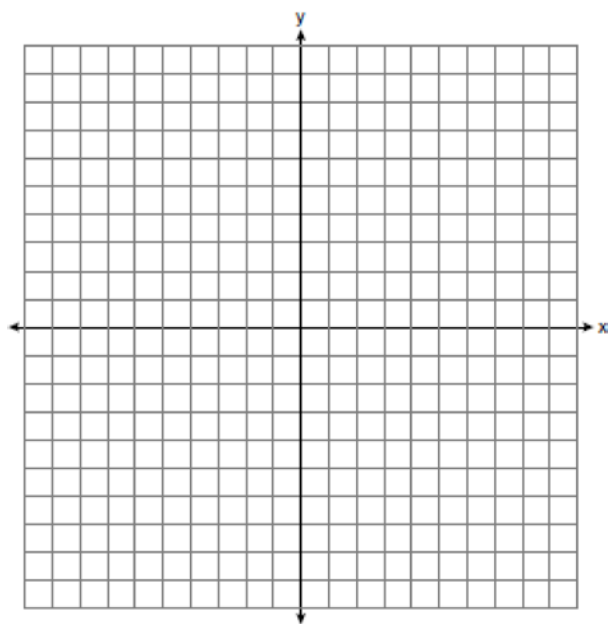
- 3 The coordinates of the vertices of $\triangle ABC$ are $A(1, 3)$, $B(-2, 2)$ and $C(0, -2)$. On the grid below, graph and label $\triangle A''B''C''$, the result of the composite transformation $D_2 \circ T_{3, -2}$. State the coordinates of A'' , B'' , and C'' .



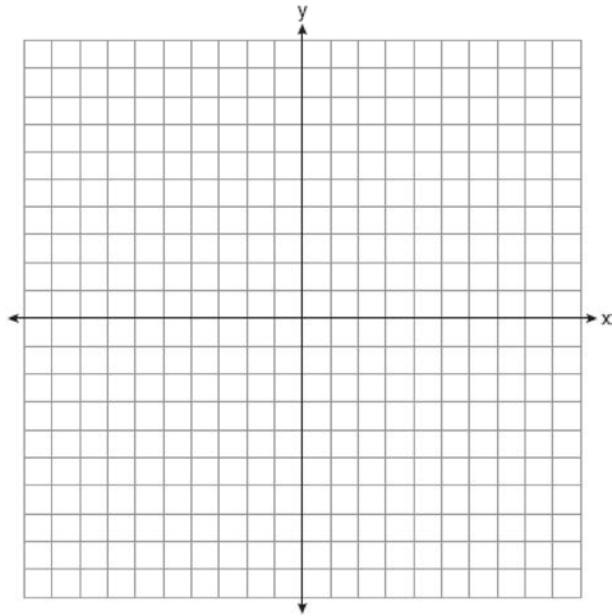
- 4 The vertices of $\triangle RST$ are $R(-6, 5)$, $S(-7, -2)$, and $T(1, 4)$. The image of $\triangle RST$ after the composition $T_{-2, 3} \circ r_{y=x}$ is $\triangle R''S''T''$. State the coordinates of $\triangle R''S''T''$. [The use of the set of axes below is optional.]



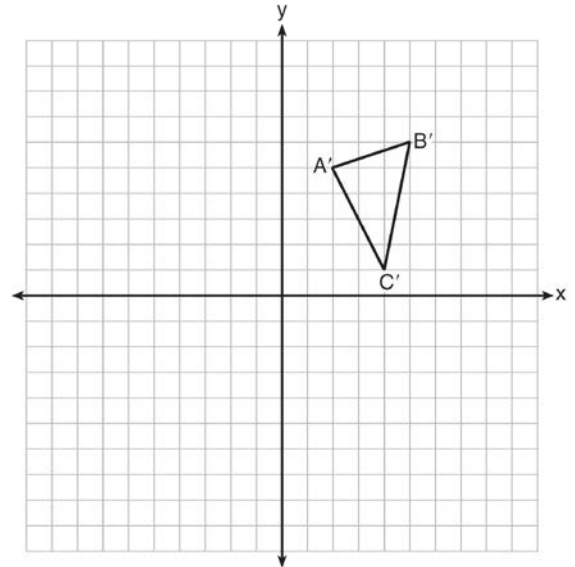
- 5 Triangle ABC has vertices $A(5, 1)$, $B(1, 4)$ and $C(1, 1)$. State and label the coordinates of the vertices of $\triangle A''B''C''$, the image of $\triangle ABC$, following the composite transformation $T_{1, -1} \circ D_2$. [The use of the set of axes below is optional.]



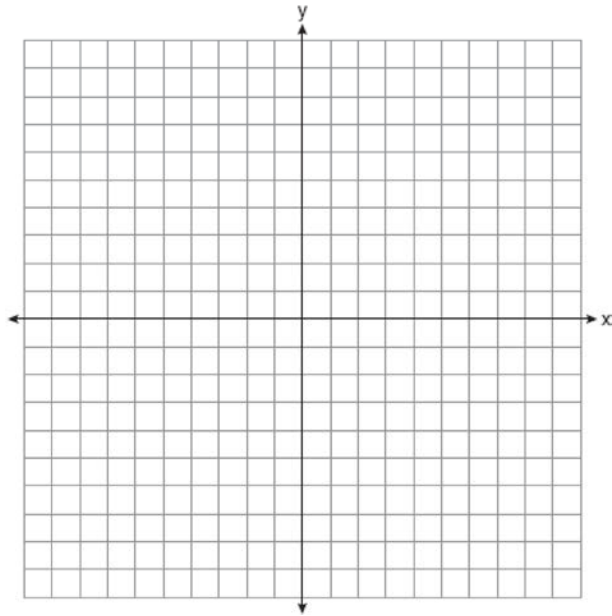
- 6 The coordinates of the vertices of $\triangle ABC$ are $A(-6, 5)$, $B(-4, 8)$, and $C(1, 6)$. State and label the coordinates of the vertices of $\triangle A''B''C''$, the image of $\triangle ABC$ after the composition of transformations $T_{(4, -5)} \circ r_{y\text{-axis}}$. [The use of the set of axes below is optional.]



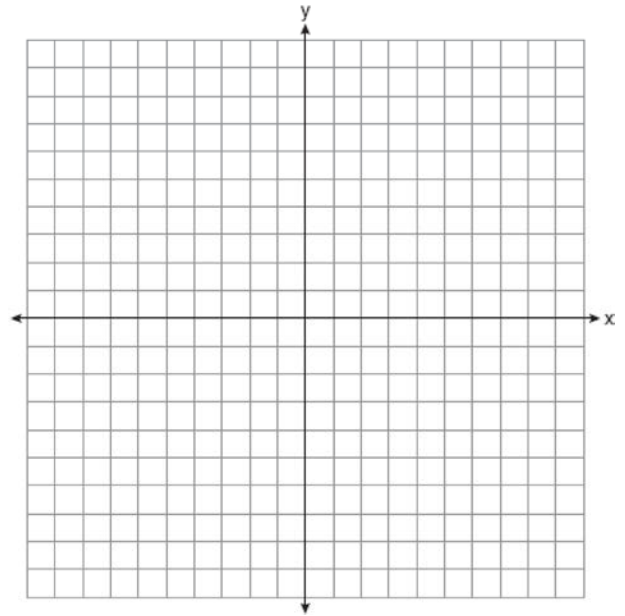
- 7 The graph below shows $\triangle A'B'C'$, the image of $\triangle ABC$ after it was reflected over the y-axis. Graph and label $\triangle ABC$, the pre-image of $\triangle A'B'C'$. Graph and label $\triangle A''B''C''$, the image of $\triangle A'B'C'$ after it is reflected through the origin. State a single transformation that will map $\triangle ABC$ onto $\triangle A''B''C''$.



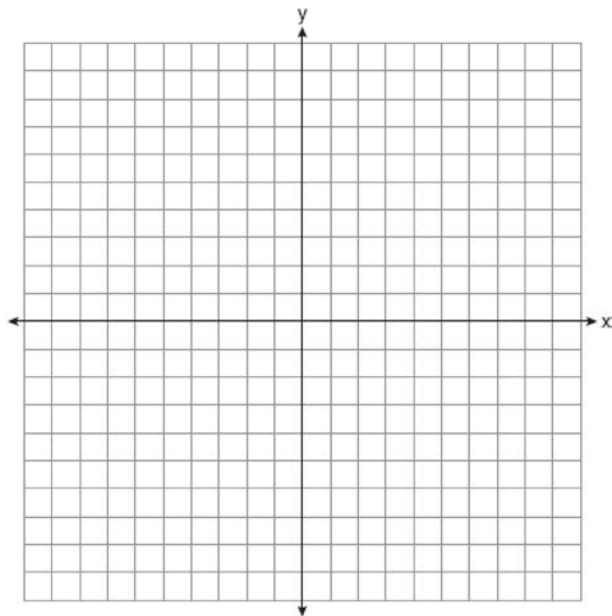
- 8 The coordinates of trapezoid $ABCD$ are $A(-4, 5)$, $B(1, 5)$, $C(1, 2)$, and $D(-6, 2)$. Trapezoid $A''B''C''D''$ is the image after the composition $r_{x\text{-axis}} \circ r_{y=x}$ is performed on trapezoid $ABCD$. State the coordinates of trapezoid $A''B''C''D''$. [The use of the set of axes below is optional.]



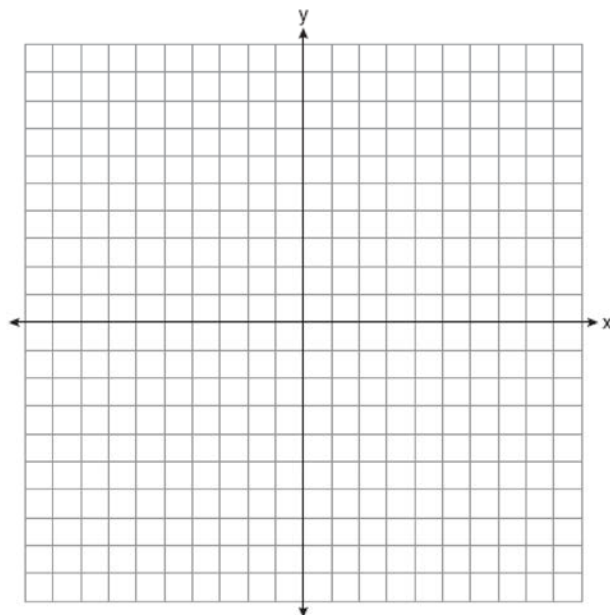
- 9 The coordinates of the vertices of parallelogram $SWAN$ are $S(2, -2)$, $W(-2, -4)$, $A(-4, 6)$, and $N(0, 8)$. State and label the coordinates of parallelogram $S''W''A''N''$, the image of $SWAN$ after the transformation $T_{4, -2} \circ D_{\frac{1}{2}}$. [The use of the set of axes below is optional.]



- 10 Quadrilateral *MATH* has coordinates $M(-6, -3)$, $A(-1, -3)$, $T(-2, -1)$, and $H(-4, -1)$. The image of quadrilateral *MATH* after the composition $r_{x\text{-axis}} \circ T_{7,5}$ is quadrilateral $M''A''T''H''$. State and label the coordinates of $M''A''T''H''$. [The use of the set of axes below is optional.]



- 11 Quadrilateral *HYPE* has vertices $H(2, 3)$, $Y(1, 7)$, $P(-2, 7)$, and $E(-2, 4)$. State and label the coordinates of the vertices of $H''Y''P''E''$ after the composition of transformations $r_{x\text{-axis}} \circ T_{5,-3}$. [The use of the set of axes below is optional.]



G.G.58: Compositions of Transformations: Define, investigate, justify, and apply similarities (dilations and the composition of dilations and isometries)

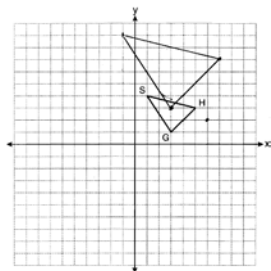
Answer Section

1 ANS: 1

After the translation, the coordinates are $A'(-1, 5)$ and $B'(3, 4)$. After the dilation, the coordinates are $A''(-2, 10)$ and $B''(6, 8)$.

REF: fall0823ge

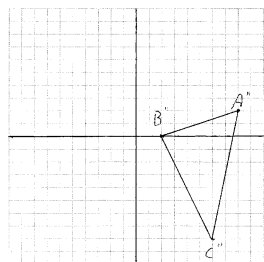
2 ANS:



$G''(6, 6), H''(14, 14), S''(-2, 18)$

REF: 081136ge

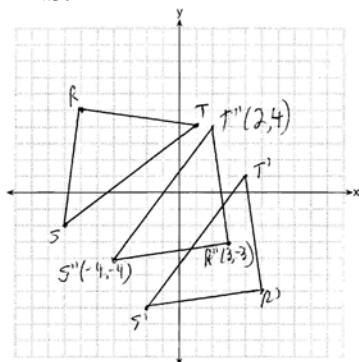
3 ANS:



$A''(8, 2), B''(2, 0), C''(6, -8)$

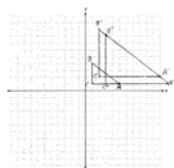
REF: 081036ge

4 ANS:



REF: 081236ge

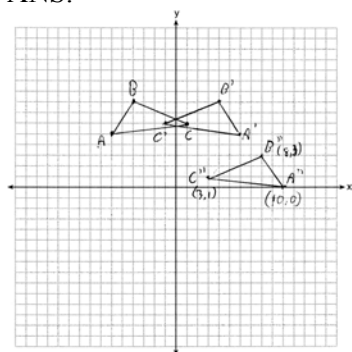
5 ANS:



$$A''(11, 1), B''(3, 7), C''(3, 1)$$

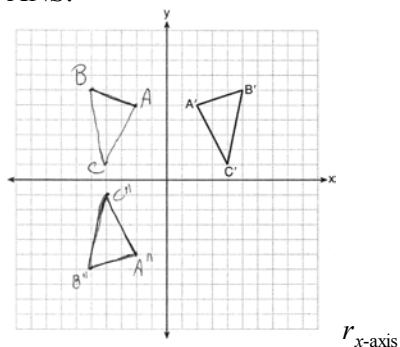
REF: 011336ge

6 ANS:



REF: 011436ge

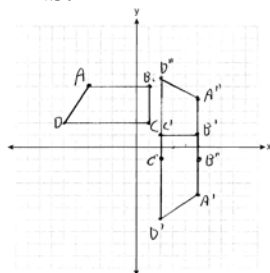
7 ANS:



x-axis

REF: 061435ge

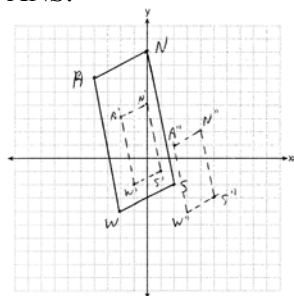
8 ANS:



$$A'(5, -4), B'(5, 1), C'(2, 1), D'(2, -6); A''(5, 4), B''(5, -1), C''(2, -1), D''(2, 6)$$

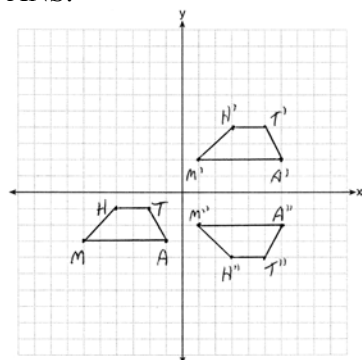
REF: 061236ge

9 ANS:


 $S''(5, -3), W''(3, -4), A''(2, 1), \text{ and } N''(4, 2)$

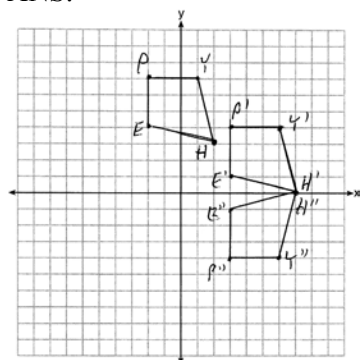
REF: 061335ge

10 ANS:


 $M''(1, -2), A''(6, -2), T''(5, -4), H''(3, -4)$

REF: 081336ge

11 ANS:


 $H'(7, 0), Y'(6, 4), P'(3, 4), E'(3, 1)$
 $H''(7, 0), Y''(6, -4), P''(3, -4), E''(3, -1)$

REF: 011535ge