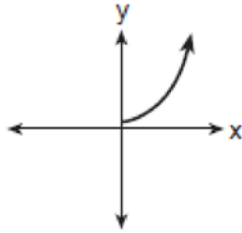
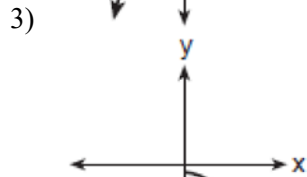
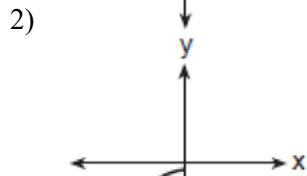
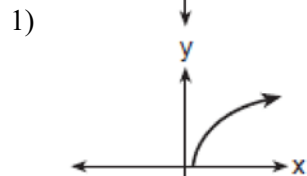


F.BF.B.3: Geometric Transformations

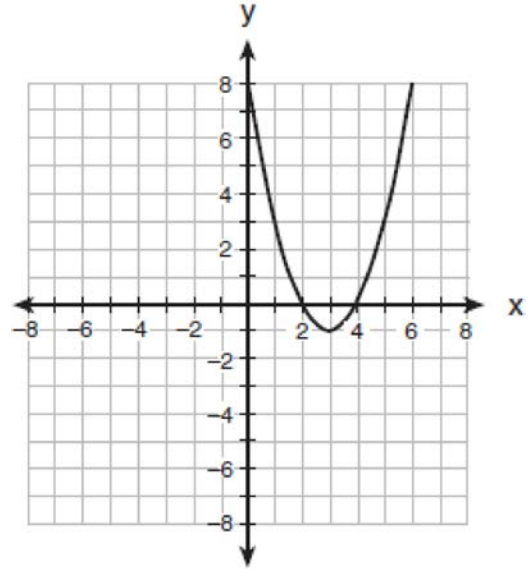
- 1 The accompanying graph shows the relationship between kinetic energy, y , and velocity, x .



The reflection of this graph in the line $y = x$ is



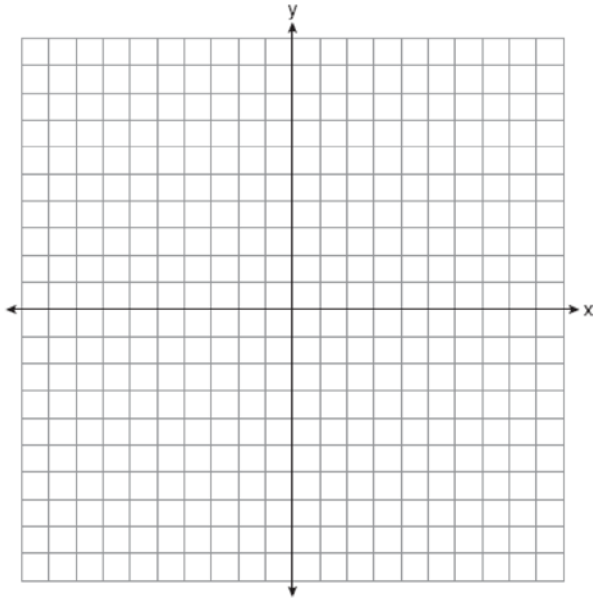
- 2 The parabola shown in the accompanying diagram undergoes a reflection in the y -axis.



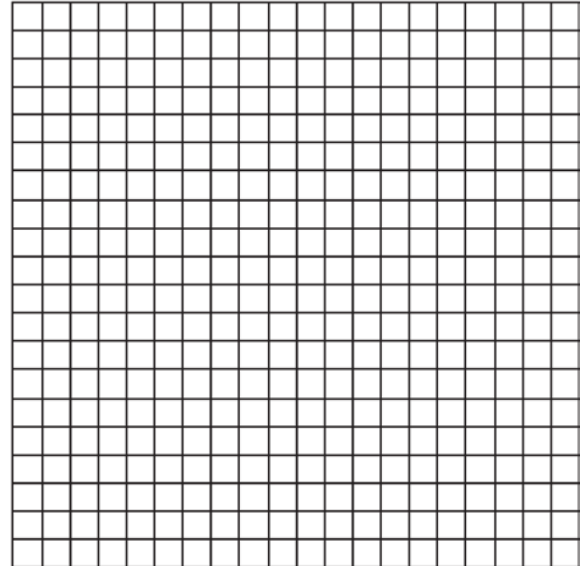
What will be the coordinates of the turning point after the reflection?

- 1) $(3, -1)$
 - 2) $(3, 1)$
 - 3) $(-3, 1)$
 - 4) $(-3, -1)$
- 3 Which transformation of the graph of $y = x^2$ would result in the graph of $y = x^2 + 2$?
- 1) D_2
 - 2) $T_{0,2}$
 - 3) $r_{y=2}$
 - 4) $R_{0,90^\circ}$

- 4 Two parabolic arches are to be built. The equation of the first arch can be expressed as $y = -x^2 + 9$, with a range of $0 \leq y \leq 9$, and the second arch is created by the transformation $T_{7,0}$. On the accompanying set of axes, graph the equations of the two arches. Graph the line of symmetry formed by the parabola and its transformation and label it with the proper equation.



- 5 *a* On the accompanying grid, graph the equation $2y = 2x^2 - 4$ in the interval $-3 \leq x \leq 3$ and label it *a*.
b On the same grid, sketch the image of *a* under $T_{5,-2} \circ r_{x\text{-axis}}$ and label it *b*.

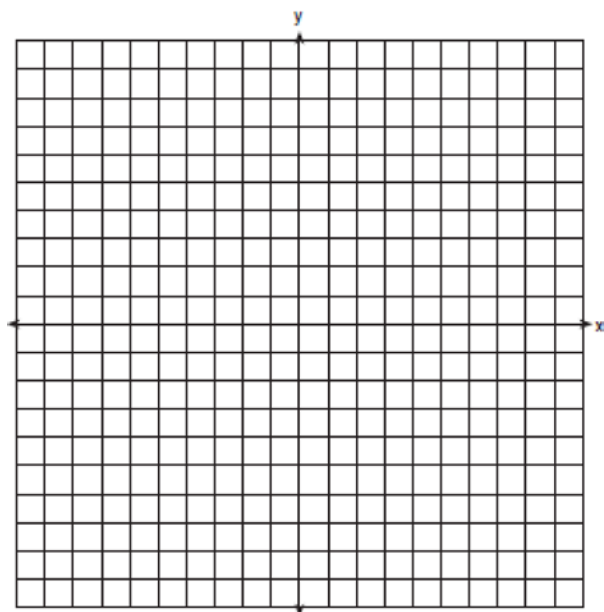


- 6 Graph and label the following equations, a and b , on the accompanying set of coordinate axes.

$$a: y = x^2$$

$$b: y = -(x - 4)^2 + 3$$

Describe the composition of transformations performed on a to get b .



- 7 Which transformation of $y = 2^x$ results in the function $y = 2^x - 2$?

- 1) $T_{0,-1}$
- 2) $T_{0,-2}$
- 3) $r_{y\text{-axis}}$
- 4) $r_{x\text{-axis}}$

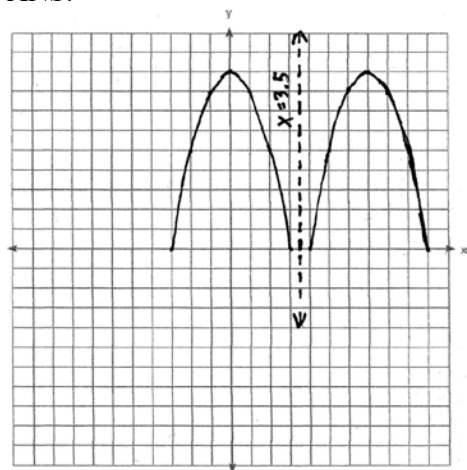
F.BF.B.3: Geometric Transformations
Answer Section

1 ANS: 2 REF: 080820b

2 ANS: 4 REF: 010901b

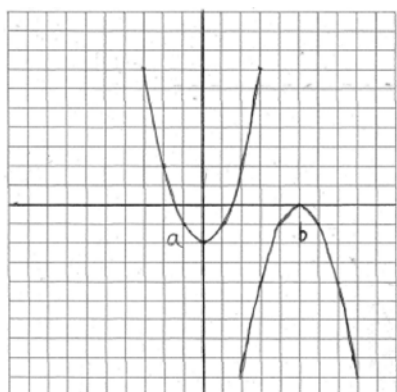
3 ANS: 2 REF: 010605b

4 ANS:



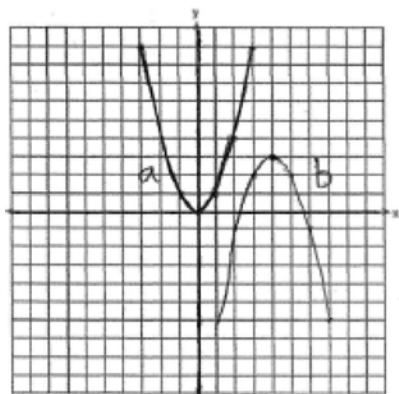
REF: 060129b

5 ANS:



REF: 010232b

6 ANS:


 $T_{4,3} \circ r_{x\text{-axis}}, r_{x=3} \circ T_{4,3}$ or $T_{4,3} \circ R_{180^\circ}$

REF: 080231b

7 ANS: 2

REF: 080801b