

NAME _____ **DATE** _____ **PER.** _____

TRANSFORMATIONS OF QUADRATIC FUNCTIONS – Day 2

Fill in the table below.

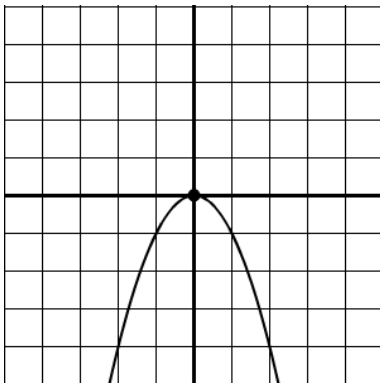
Equation	Description of the change in $y = x^2$
1. $y = x^2 - 7$	
2.	Shift up 2 units
3. $y = (x - 3)^2 + 3$	
4.	Stretch by a factor 3, shift up 1 unit
5. $y = -\frac{1}{4}x^2$	
6.	Reflect across the x-axis, shift down 4 units
7. $y = -(x + 7)^2$	
8.	Compress by a factor $\frac{1}{2}$, shift left 5 units, and down 13 units

Write the equation, domain, and range for each graph.

9. Eqn: _____

D: _____

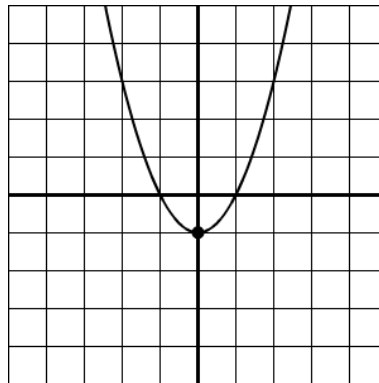
R: _____



10. Eqn: _____

D: _____

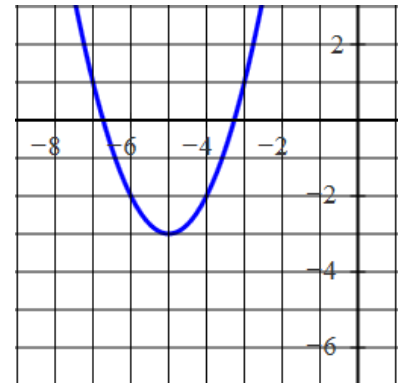
R: _____



11. Eqn: _____

D: _____

R: _____

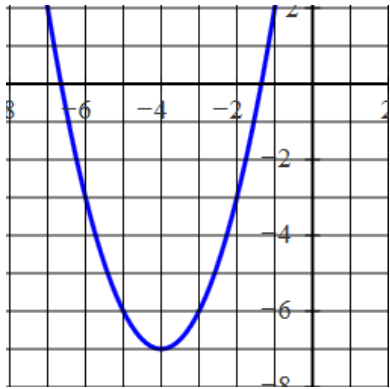


Write the equation, vertex, and axis of symmetry (AOS) for each graph.

12. Eqn: _____

Vertex: _____

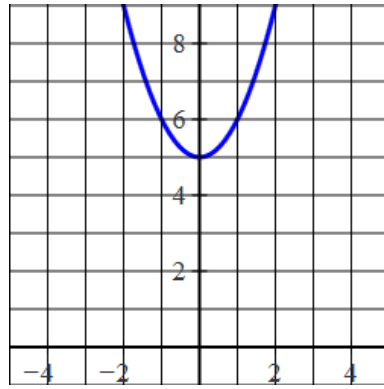
AOS: _____



13. Eqn: _____

Vertex: _____

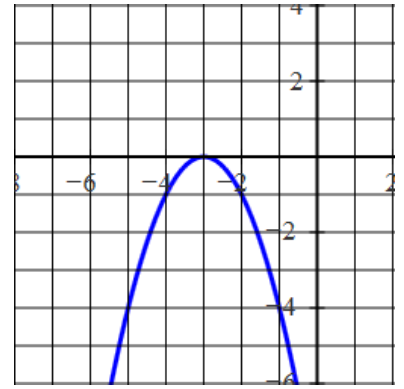
AOS: _____



14. Eqn: _____

Vertex: _____

AOS: _____



Multiple Choice. Show all work.

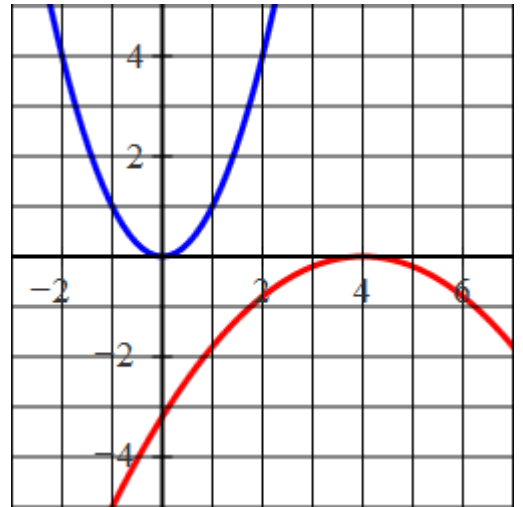
15. The graph shows two parabolas, one of which is described by $f(x) = x^2$. Which function describes the other parabola?

A. $y = -2(x - 4)^2 + 4$

B. $y = (2x)^2 - 4$

C. $y = 0.2(x + 4)^2$

D. $y = -0.2(x - 4)^2$



16. If n is a nonzero real number, which of the following has the same axis of symmetry as the parent function $y = x^2$? There may be more than one answer.

A. $y = x^2 + n$

B. $y = (x - n)^2$

C. $y = nx^2$

D. $y = (x + n)^2$

Why did you pick the answer(s) you did?

REVIEW. Show ALL work.

17. Mary has \$220 in her purse. If she buys 4 items that each cost d dollars, which expression represents the amount of money remaining in Mary's purse?

- A. $4d$ B. $220 - 4d$ C. $220 + 4d$ D. $220(4d)$

18. The length of a rectangle is $x + 5$, and its width is $x - 2$. Which expression represents the area of the rectangle?

- A. $4x + 6$ C. $x^2 - 3x - 10$
B. $x^2 + 3x - 10$ D. $x^2 - 10$

19. Write the equation of the line that passes through the point $(2, -5)$ and has a slope of -3 .

20. Write the equation of the line that is parallel to $y = \frac{1}{3}x - 4$ and goes through the point $(-3, 1)$.