

Name:

KEY

Date:

Hour:

Algebra 1
Transforming Quadratics WS

Describe each transformation.

1. $y = \frac{1}{2}(x-3)^2 + 1$

- opens up
- vertical comp (wide)
- right 3, up 1
- (3, 1)

2. $y = -(x+6)^2$

- opens down
- normal width
- shifted left 6
- vertex (-6, 0)

3. $y = 3(x)^2 - 2$

- opens up
- vertical stretch (narrow)
- shifted down 2
- vertex (0, -2)

4. $y = -\frac{3}{4}(x+2)^2 - 8$

- opens down
- vertical comp (wide)
- shifted left 2, down 8
- vertex (-2, -8)

5. $y = (x-7)^2 + 10$

- opens up
- normal width
- shifted right 7, up 10
- vertex (7, 10)

6. $y = -5(x-12)^2 - 4$

- opens down
- vertical stretch (narrow)
- shifted right 12, down 4
- vertex (12, -4)

Write a quadratic equation that represents each transformation.

7. Stretched by a factor of 3, reflected, vertex at (4, -2)

$$y = -3(x-4)^2 - 2$$

8. Vertex at (0, 5), wide

$$y = \frac{1}{2}(x)^2 + 5$$

9. Shifted 3 units down and 4 units right, normal, reflected

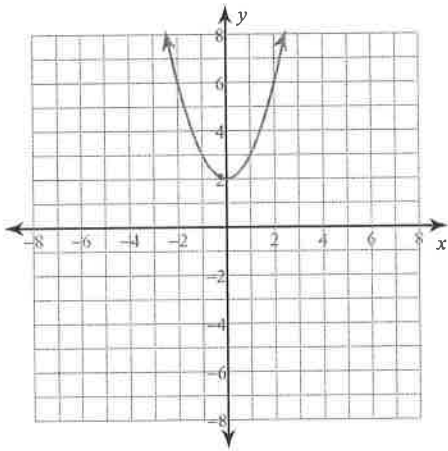
$$y = -(x-4)^2 - 3$$

10. Compressed by a factor of
- $\frac{1}{2}$
- , vertex at (8, 1)

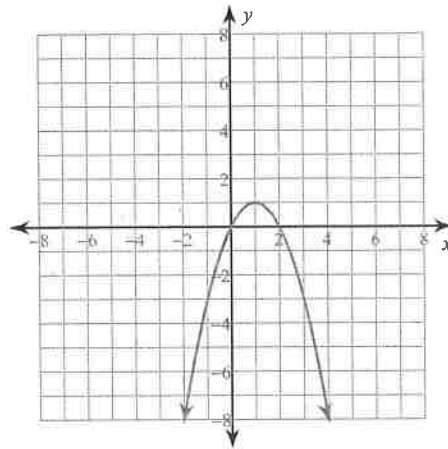
$$y = \frac{1}{2}(x-8)^2 + 1$$

Graph each equation.

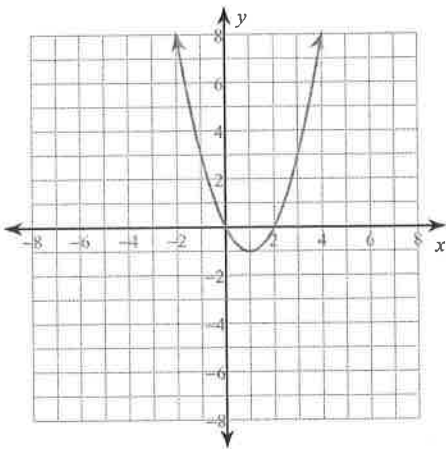
11) $f(x) = x^2 + 2$



12) $f(x) = -x^2 + 2x$



13) $f(x) = x^2 - 2x$



14) $f(x) = -x^2 + 1$

