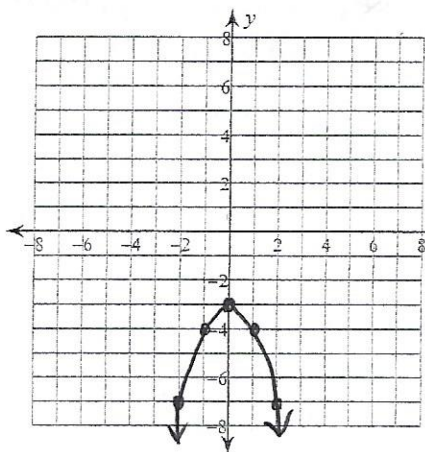


Transformations Day 2

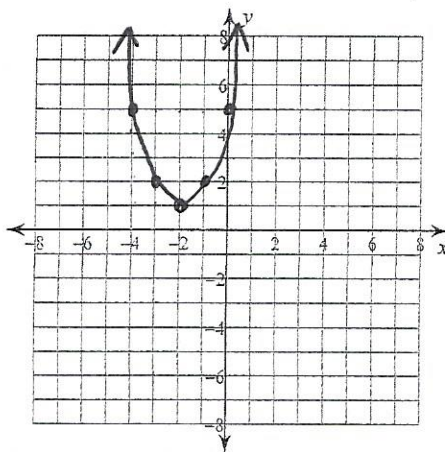
Graph each function and describe the transformation from the parent function.

1) $g(x) = -x^2 - 3$ (0, -3)



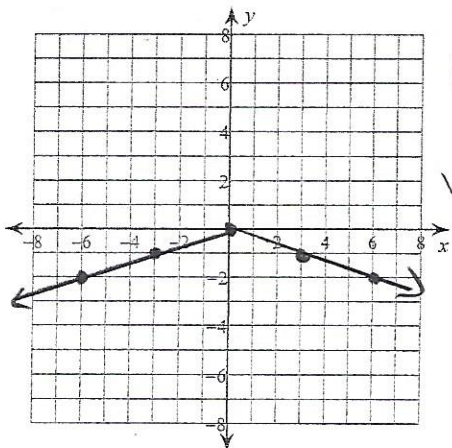
Reflection across x-axis.
Shifts down 3 units.

2) $g(x) = (x + 2)^2 + 1$ (-2, 1)



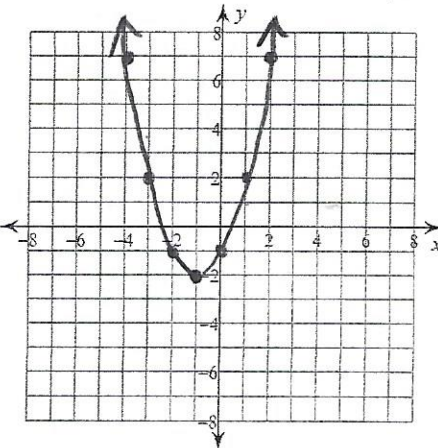
Shifts left 2 units, up 1 unit.

3) $g(x) = -\frac{1}{3} \cdot |x|$ (0, 0)



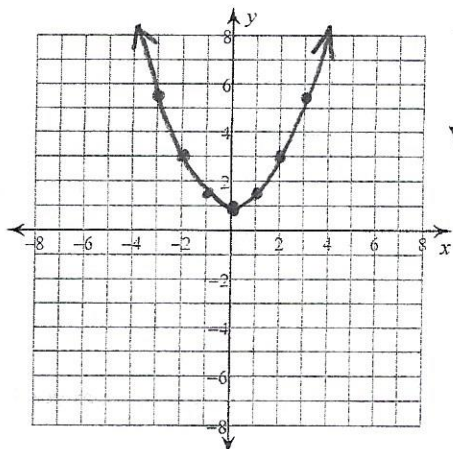
Reflection across x-axis
Vertical Shrink with a factor of 1/3.

4) $g(x) = (x + 1)^2 - 2$ (-1, -2)



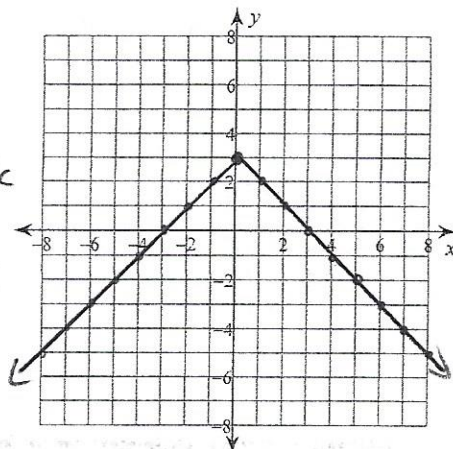
Shifts left 1 unit, down 2 units.

5) $g(x) = \frac{1}{2}x^2 + 1$ (0, 1)



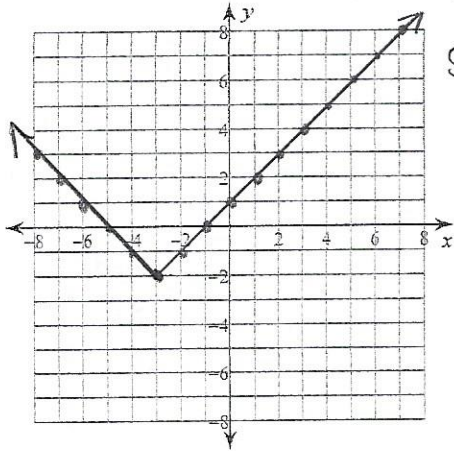
Shifts up 1 unit.
Vertical Shrink with a factor of 1/2

6) $g(x) = -|x| + 3$ (0, 3)



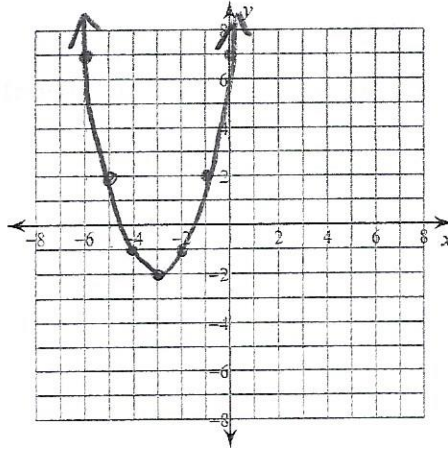
Reflection across x-axis.
Shifts up 3 units.

7) $g(x) = |x+3| - 2$ $(-3, -2)$



Shifts left 3
units, down
2 units.

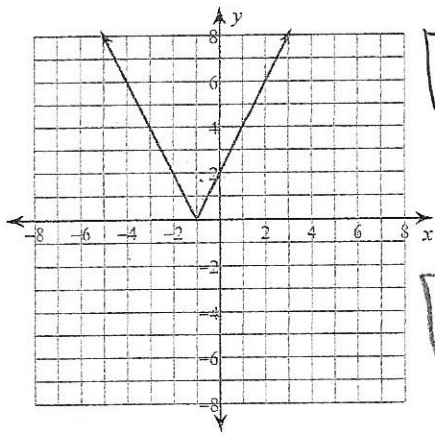
8) $g(x) = (x+3)^2 - 2$ $(-3, -2)$



Shifts left 3
units, down
2 units.

Identify the parent function $f(x)$ and write an equation for the function given.

9)



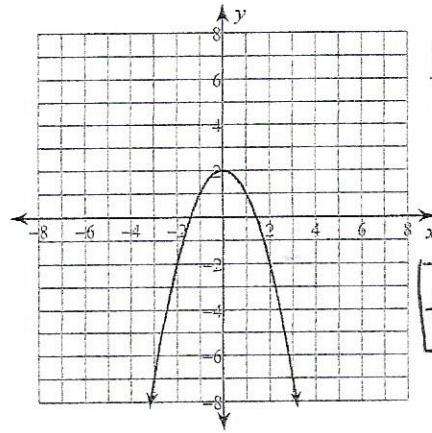
$f(x) = |x|$

$V: (-1, 0)$

$a = 2$

$f(x) = 2|x+1|$

10)



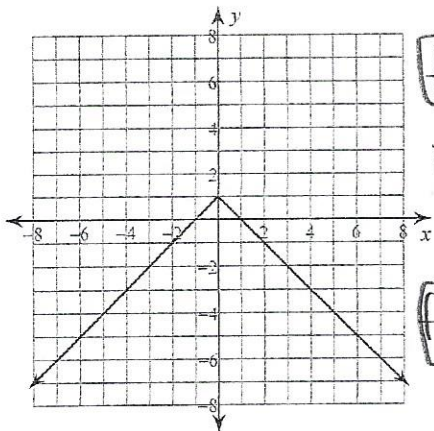
$f(x) = x^2$

$V: (0, 2)$

$a = -1$

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

11)



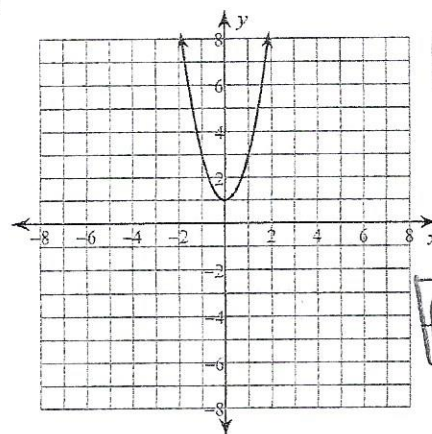
$f(x) = |x|$

$V: (0, 1)$

$a = -1$

$f(x) = -|x| + 1$

12)



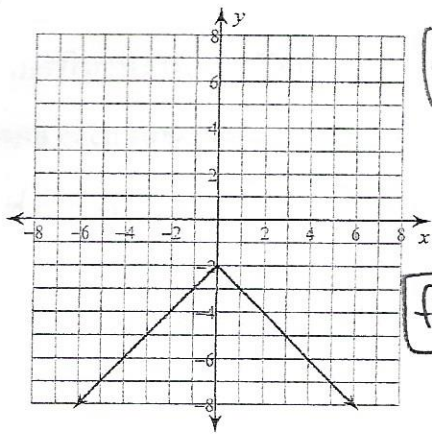
$f(x) = x^2$

$V: (0, 1)$

$a = 2$

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

13)



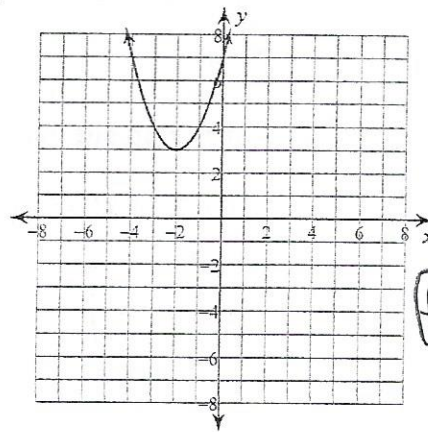
$$f(x) = |x|$$

$$V: (0, -2)$$

$$a = -1$$

$$f(x) = -|x| - 2$$

14)



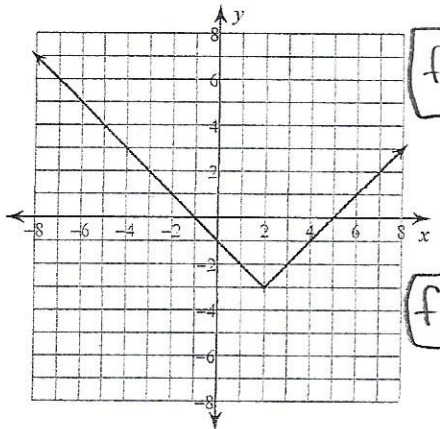
$$f(x) = x^2$$

$$V: (-2, 3)$$

$$a = 1$$

$$f(x) = (x+2)^2 + 3$$

15)



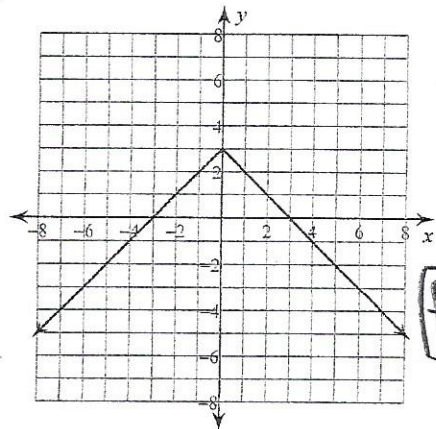
$$f(x) = |x|$$

$$V: (2, -3)$$

$$a = 1$$

$$f(x) = |x-2| - 3$$

16)



$$f(x) = |x|$$

$$V: (0, 3)$$

$$a = -1$$

$$f(x) = -|x| + 3$$

Transform the given function $f(x)$ as described and write the resulting function as an equation.

17) $f(x) = |x|$

reflect across the x-axis
translate left 1 unit

$$a = -1 \quad (-1, 0)$$

$$f(x) = -|x+1|$$

18) $f(x) = x^2$

reflect across the x-axis
translate left 2 units

$$a = -1 \quad (-2, 0)$$

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

19) $f(x) = x^2$

translate left 3 units
translate up 2 units

$$(-3, 2)$$

$$f(x) = (x+3)^2 + 2$$

20) $f(x) = x^2$

compress vertically by a factor of 2
reflect across the x-axis

$$a = \frac{1}{2}$$

$$f(x) = -\frac{1}{2}x^2$$

21) $f(x) = x^2$

reflect across the x-axis
translate right 1 unit

$$a = -1 \quad (1, 0)$$

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

22) $f(x) = |x|$

reflect across the x-axis
translate up 2 units

$$a = -1 \quad (0, 2)$$

$$f(x) = -|x| + 2$$

23) $f(x) = |x|$

stretch vertically by a factor of 2
translate down 3 units

$$a = 2 \quad (0, -3)$$

$$f(x) = 2|x| - 3$$

24) $f(x) = |x|$

compress vertically by a factor of 3
translate right 1 unit

$$a = \frac{1}{3} \quad (1, 0)$$

$$f(x) = \frac{1}{3}|x-1|$$