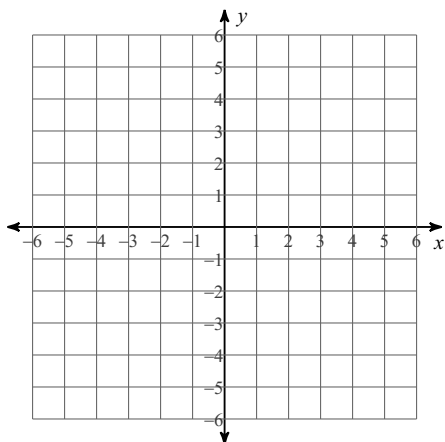


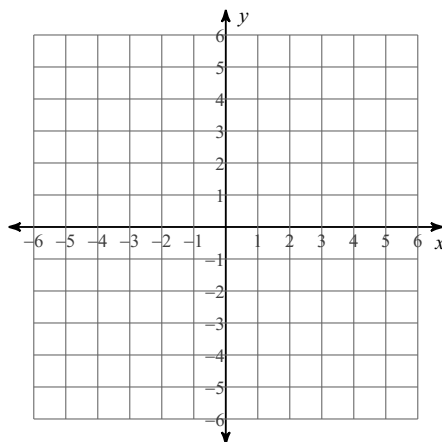
Unit 4a Test Review - Graphing Quadratic, Abs. Value, & Piecewise Functions

Graph each equation.

1) $y = |x + 3| + 2$

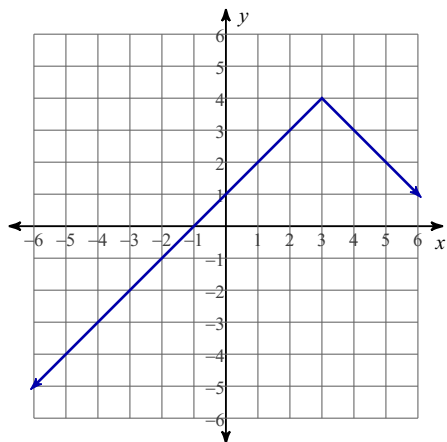


2) $y = -|x + 1| - 4$

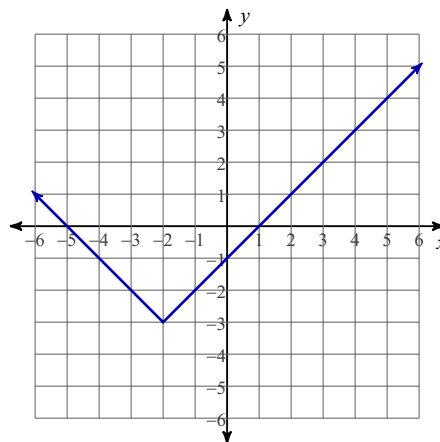


Write the equation of the absolute value graph given.

3)

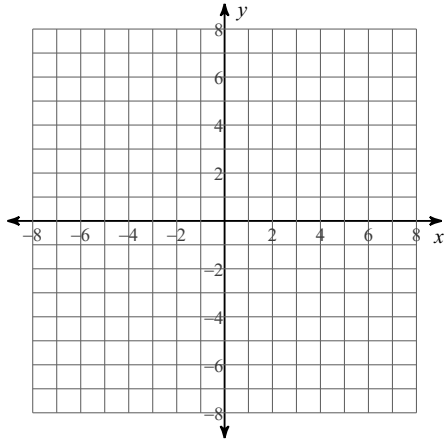


4)

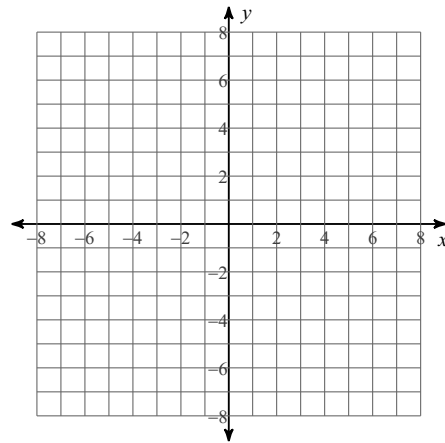


Graph the piecewise functions:

$$5) f(x) = \begin{cases} \frac{2}{3}x + 3, & x < -3 \\ -x - 2, & -3 \leq x < 1 \\ -5, & x \geq 1 \end{cases}$$



$$6) f(x) = \begin{cases} x + 1, & x < 0 \\ x^2, & x \geq 0 \end{cases}$$



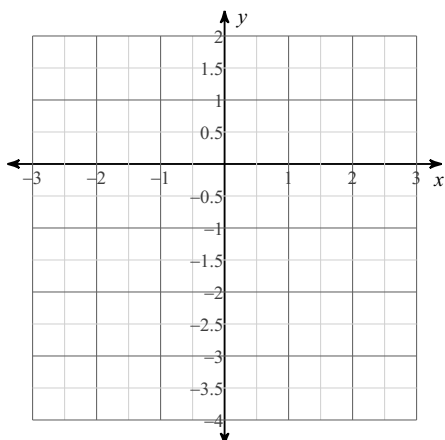
Write the vertex form equation of a parabola which has the following transformation from the parent graph of $y = x^2$.

- 7) Shifted three units to the left
Shifted four units down
Vertically compressed by $\frac{1}{2}$

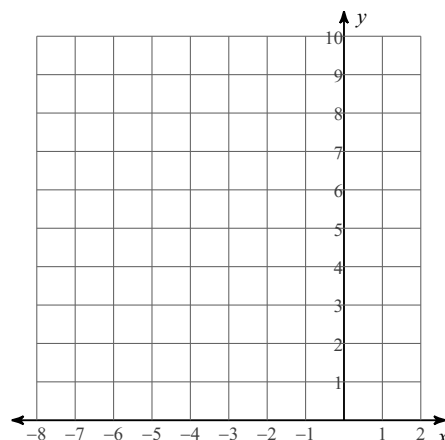
- 8) Shifted seven units to the right
Reflected over the x-axis
Vertically stretched by 2

Sketch the graph of each function and give the Domain and Range for each.

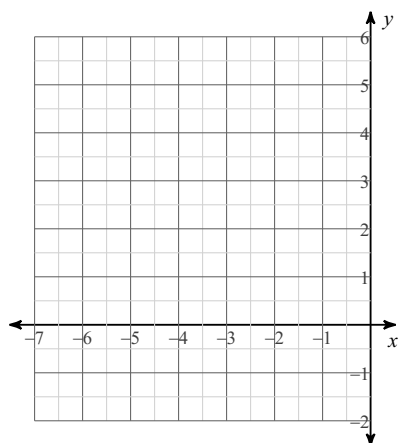
$$9) f(x) = (x + 1)^2 - 3$$



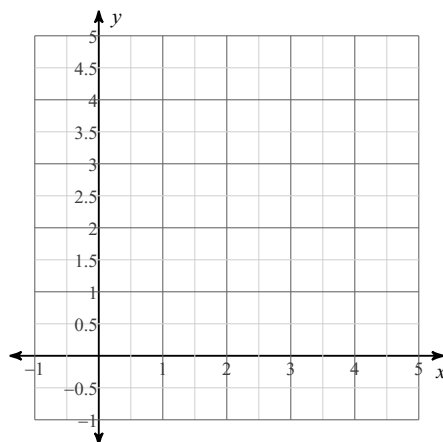
$$10) f(x) = 2(x + 3)^2 + 1$$



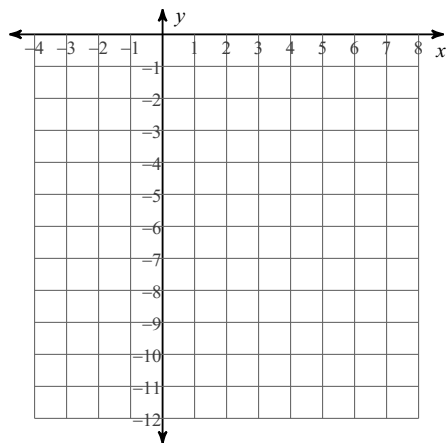
11) $f(x) = -(x + 4)^2 + 4$



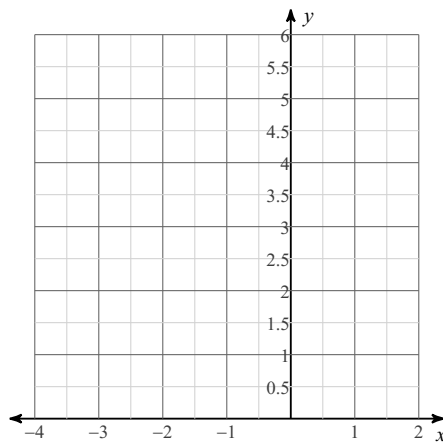
12) $f(x) = -\frac{1}{2}(x - 2)^2 + 3$



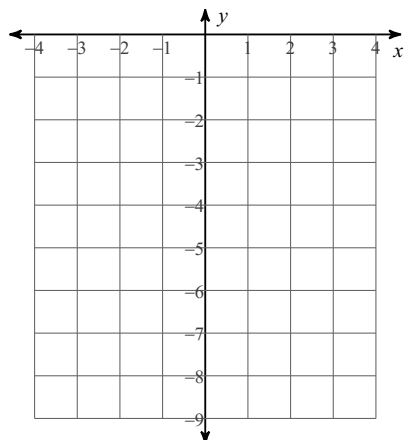
13) $f(x) = -2x^2 - 4x - 5$



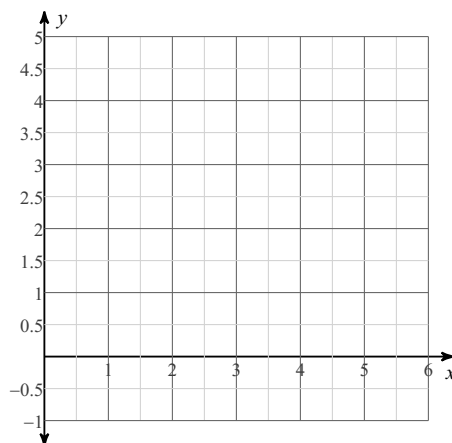
14) $f(x) = x^2 + 4x + 5$



15) $f(x) = -x^2 - 2x - 5$

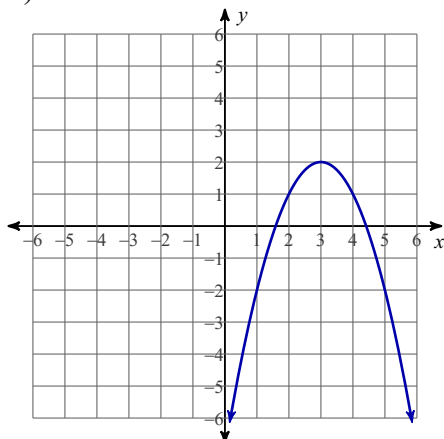


16) $f(x) = \frac{1}{2}x^2 - 2x + 3$

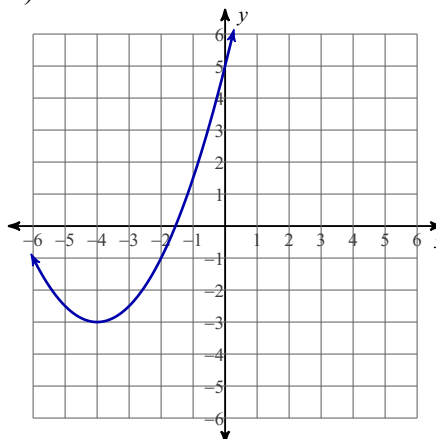


Write the equation of each function in both:

- 17) a) Vertex Form
b) Standard Form



- 18) a) Vertex Form
b) Standard Form



Use the information provided to write the standard form equation of each parabola.

19) $f(x) = -(x + 3)^2 - 5$

20) $f(x) = 2(x - 9)^2 + 2$

Use the information provided to write the vertex form equation of each parabola.

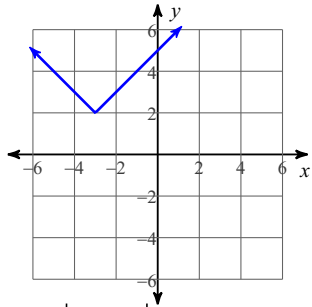
21) $f(x) = 3x^2 + 6x - 1$

22) $f(x) = 4x^2 - 72x + 329$

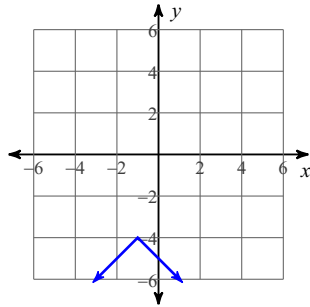
23) Lastly, go back and review the Quadratic word problems from last week. There will be problems similar to those on the test as well.

Answers to Unit 4a Test Review - Graphing Quadratic, Abs. Value, & Piecewise Functions

1)



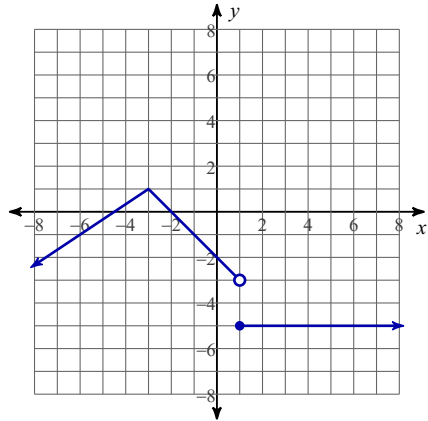
2)



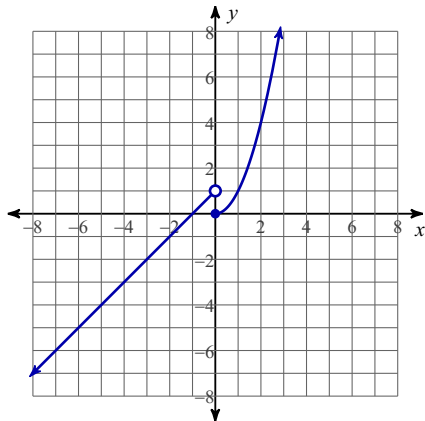
3) $y = -|x - 3| + 4$

4) $y = |x + 2| - 3$

5)



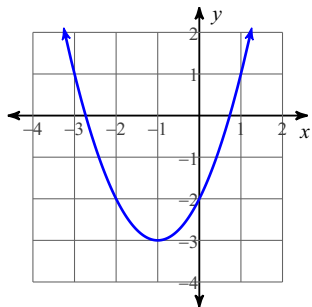
6)



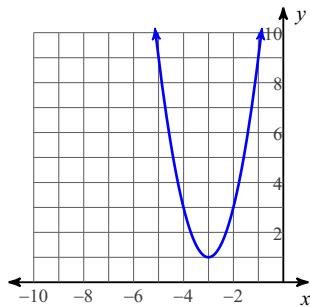
7) $y = \frac{1}{2}(x + 3)^2 - 4$

8) $y = -2(x - 7)^2$

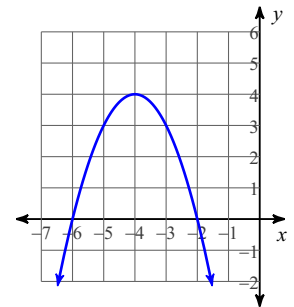
9)



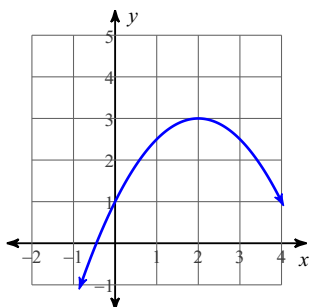
10)



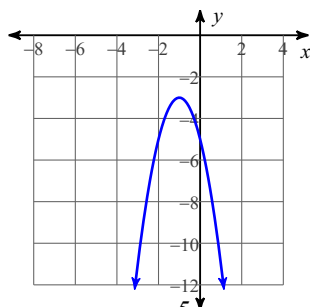
11)



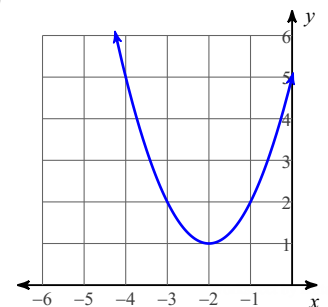
12)



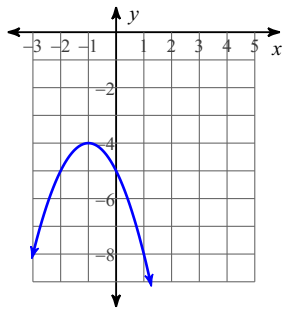
13)



14)



15)

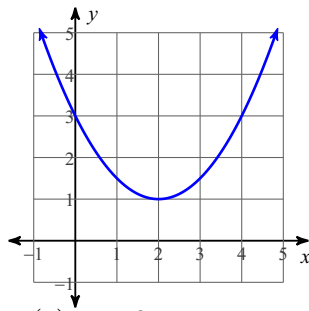


18) a) $y = \frac{1}{2}(x + 4)^2 - 3$

b) $y = \frac{1}{2}x^2 + 4x + 5$

21) $f(x) = 3(x + 1)^2 - 4$

16)



19) $f(x) = -x^2 - 6x - 14$

22) $f(x) = 4(x - 9)^2 + 5$

17) a) $y = -(x - 3)^2 + 2$

b) $y = -x^2 + 6x - 7$

20) $f(x) = 2x^2 - 36x + 164$

23) Good Luck!