

Sec II
Unit 4 Review

Part I: Matching. Match each equation on the left with its inverse listed on the right.

_____ 1) $y = 3x - 4$

a) $y = 3 \pm \sqrt{x}$

_____ 2) $y = 4x - 3$

b) $y = -2 \pm \sqrt{x - 7}$

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

c) $y = \frac{1}{4}x + \frac{3}{4}$

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

d) $y = -2 \pm \sqrt{x + 1}$

_____ 5) $y = x^2 + 4x + 3$

e) $y = \pm \frac{1}{2}\sqrt{x + 3}$

f) $y = \frac{1}{3}x + \frac{4}{3}$

Part II: Short Answer

Solve each equation for x .

6) $|4x - 6| = 10$

7) $|10 + v| = 20$

8) $|x^2 + 7x + 5| = 5$

Simplify.

9) $-2\sqrt{18} - (3 + 2\sqrt{2})$

10) $4\sqrt{2}(3 - 6\sqrt{2})$

11) $(4 + 4\sqrt{3})(1 + \sqrt{3})$

Find the inverse of each function.

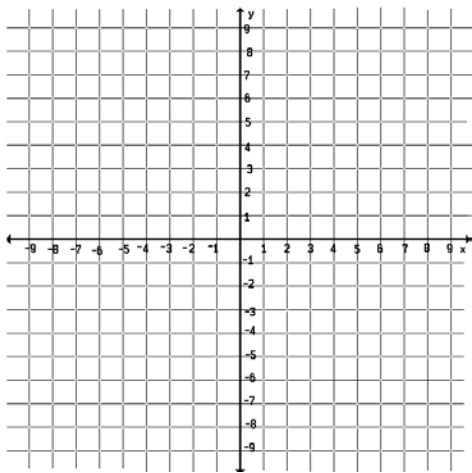
12) $f(x) = (x+3)^2$, $f^{-1}(x) = \underline{\hspace{2cm}}$

13) $g(x) = -2x - 2$, $g^{-1}(x) = \underline{\hspace{2cm}}$

Part III: Graphing

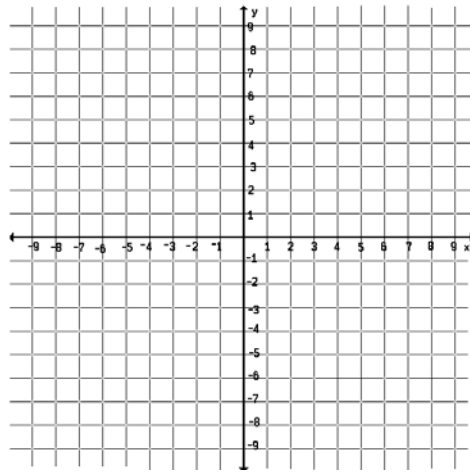
Graph each equation. Then write a piece-wise function for each graph.

14) $y = |x| - 3$



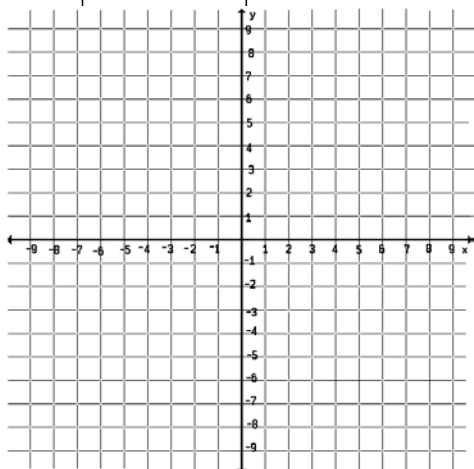
$$f(x) = \left\{ \begin{array}{l} \\ \\ \\ \end{array} \right.$$

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



$$f(x) = \left\{ \begin{array}{l} \\ \\ \\ \end{array} \right.$$

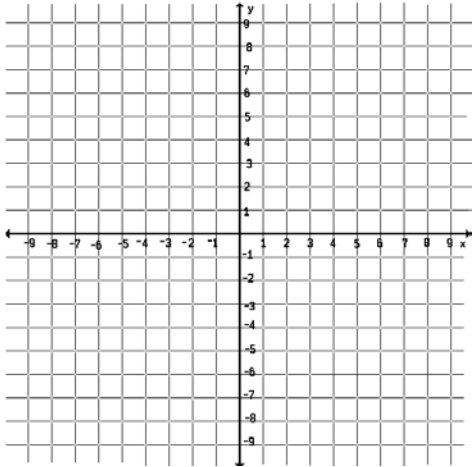
16) $y = |(x + 4)^2 - 1|$



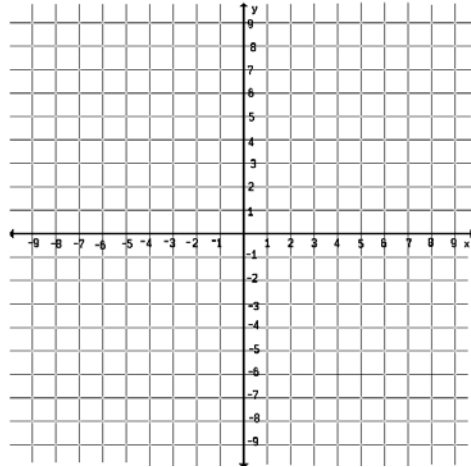
$$f(x) = \left\{ \begin{array}{l} \\ \\ \\ \end{array} \right.$$

Graph each piece-wise function.

$$17) f(x) = \begin{cases} \frac{1}{3}x + 2, & x \leq -4 \\ -4, & x > -4 \end{cases}$$



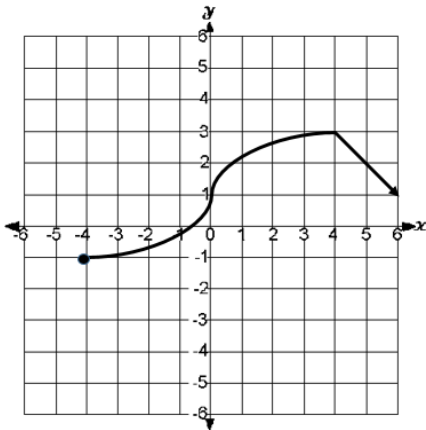
$$18) f(x) = \begin{cases} 3, & x \leq -2 \\ x^2 - 1, & -2 < x < 3 \\ -2 - \frac{1}{4}x, & x > 3 \end{cases}$$



Part IV: Short Answer

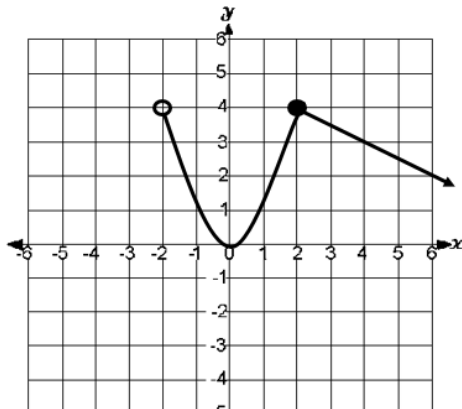
Find the following key features for each function.

19)



- a) Domain: _____
- b) Range: _____
- c) x-int: _____
- d) y-int: _____
- e) min/max: _____
- f) increasing: _____
- g) decreasing: _____
- h) constant: _____

20)



- a) Domain: _____
- b) Range: _____
- c) x-int: _____
- d) y-int: _____
- e) min/max: _____
- f) increasing: _____
- g) decreasing: _____
- h) constant: _____