Unit 1 In Class Test Review

Function Notation:

1c) $f(x) = 3x^2 - x$

$f(-2) =$

2f) $f(x) = \dfrac{2}{x}$

$f(a+1) =$

4b) $f(x) = \sqrt{2x+3}$

$f(3) =$

Systems of Equations:

Substitution

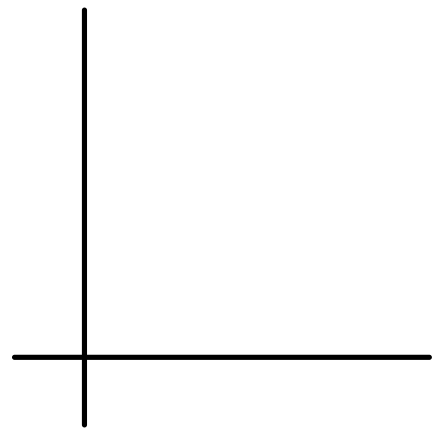1) $4x + 3y = -8$
   $-8x + y = -12$
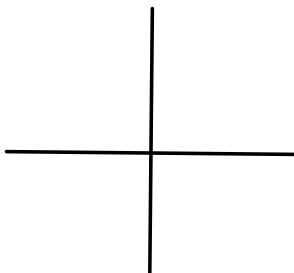
Graphing

10) $x = 7 \quad y = -x + 9$

Elimination

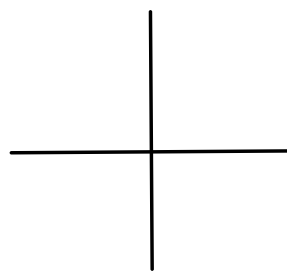6) $-15x + 9y = 27$
   $-5x - y = 17$

System of Inequalities:
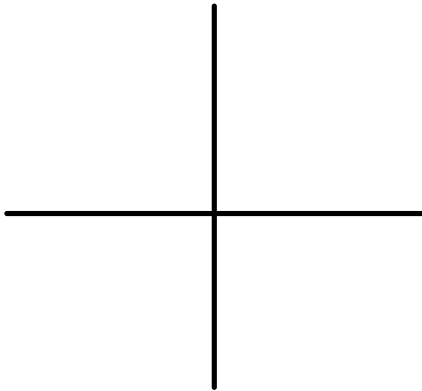
4) $y \geq x - 3 \quad y \geq -x - 1$

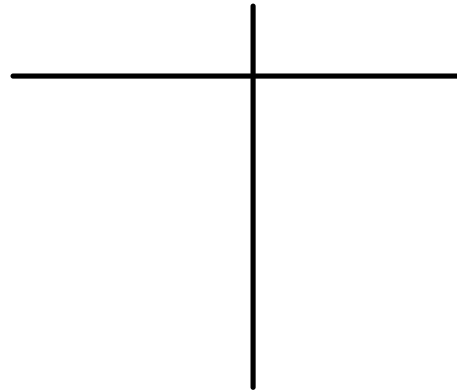5) $x \leq -3 \quad 5x + 3y \geq -9 \rightarrow y \geq -\dfrac{5}{3}x - 3$

Graphing Absolute Value Functions:

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

7) $y = -|x - 2| - 2$

Solving Absolute Value Inequalities:

15) $|p| - 3 \leq 0$

17) $|b - 8| + 10 > 22$

Piecewise Functions:

$$f(x) = \begin{cases} -2|x + 1|, & x \leq 1 \\ 3, & 1 < x < 3 \\ 6 - 2x, & x \geq 3 \end{cases}$$
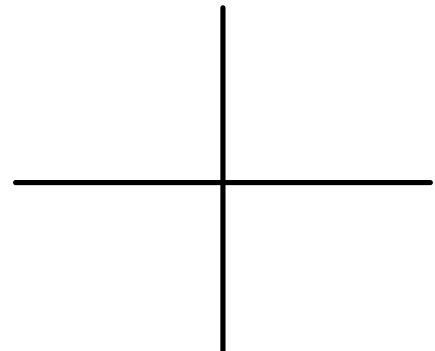
4) $f(10) =$

5) $f(2) =$

6) $f(0) =$

11). Graph

$$f(x) = \begin{cases} 3x + 12, & x \leq -3 \\ |x|, & -3 < x < 3 \\ -3x + 12, & x \geq 3 \end{cases}$$

Inverse Functions:

9) $f(x) = \sqrt[3]{x} - 3$ 11) $f(x) = 2x^3 + 3$ 17) $f(x) = -1 - \frac{1}{5}x$

Function Compositions:

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

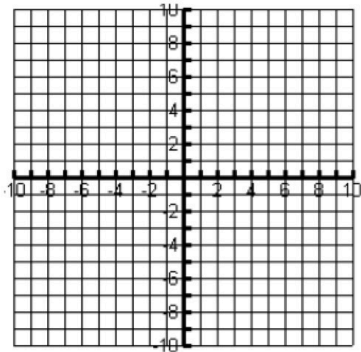5) $h(g(f(5)))$ 9) $h(x - 2)$

$f(x) = -3x + 7$ $g(x) = 2x^2 - 8$
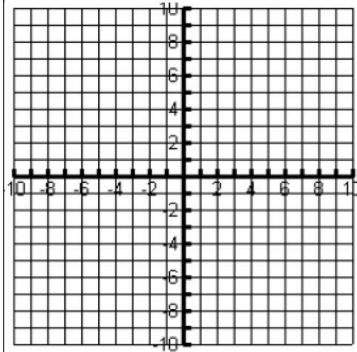
11). $(g \circ f)(x) = g(f(x))$

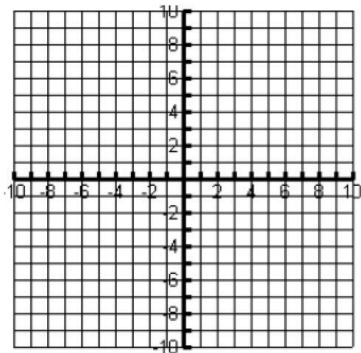## Extra Problems:

$f(x) = |x-2| + 7$

$f(x) = |x-4| + 7$

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

$f(x) = |x-3| + 4$

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

$f(x) = 2x - 4$

$y - 2 > -x^2$