

Do Now: #s 1 and 2

Name: _____

Date: _____

PC: More Piecewise Functions

Evaluate the following for $f(x) = \begin{cases} 3x - 5, & x > 4 \\ x^2, & x \leq 4 \end{cases}$:

1. $f(7)$

$$3(7) - 5 \\ 16$$

2. $f(4)$

$$4^2 \\ 16$$

3. $f(-3)$

$$(-3)^2 \\ 9$$

Evaluate the following for $f(x) = \begin{cases} -2|x+1|, & x \leq 1 \\ 3, & 1 < x < 3 \\ 6 - 2x, & x \geq 3 \end{cases}$:

4. $f(10)$

$$6 - 2(10) \\ -14$$

5. $f(2)$

$$3$$

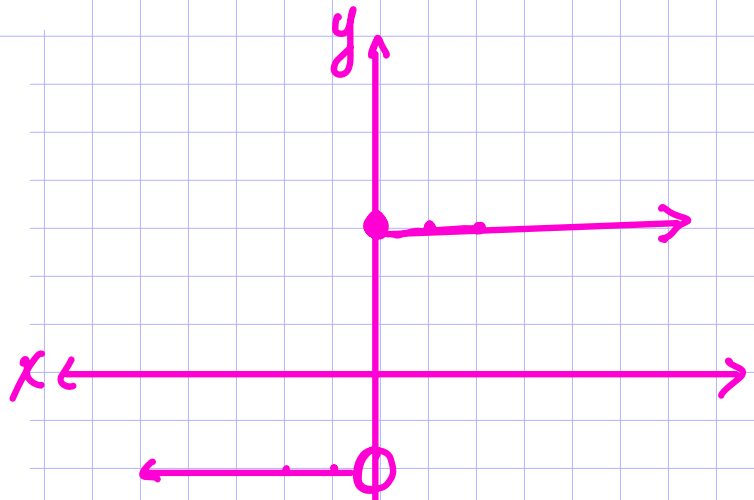
6. $f(0)$

$$-2|0+1| \\ -2(1) \\ -2$$

constant
function

Graph the following piecewise functions.

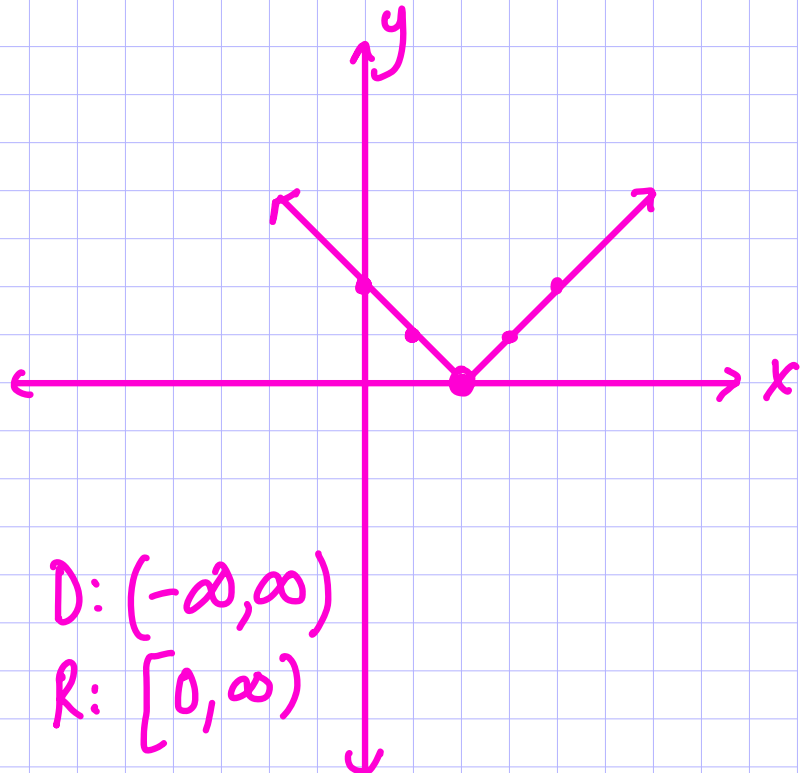
$$7. f(x) = \begin{cases} -2, & x < 0 \\ 3, & x \geq 0 \end{cases}$$



$$D: (-\infty, \infty)$$

$$R: \{-2, 3\}$$

$$8. g(x) = \begin{cases} -x+2, & x < 2 \\ x-2, & x \geq 2 \end{cases}$$



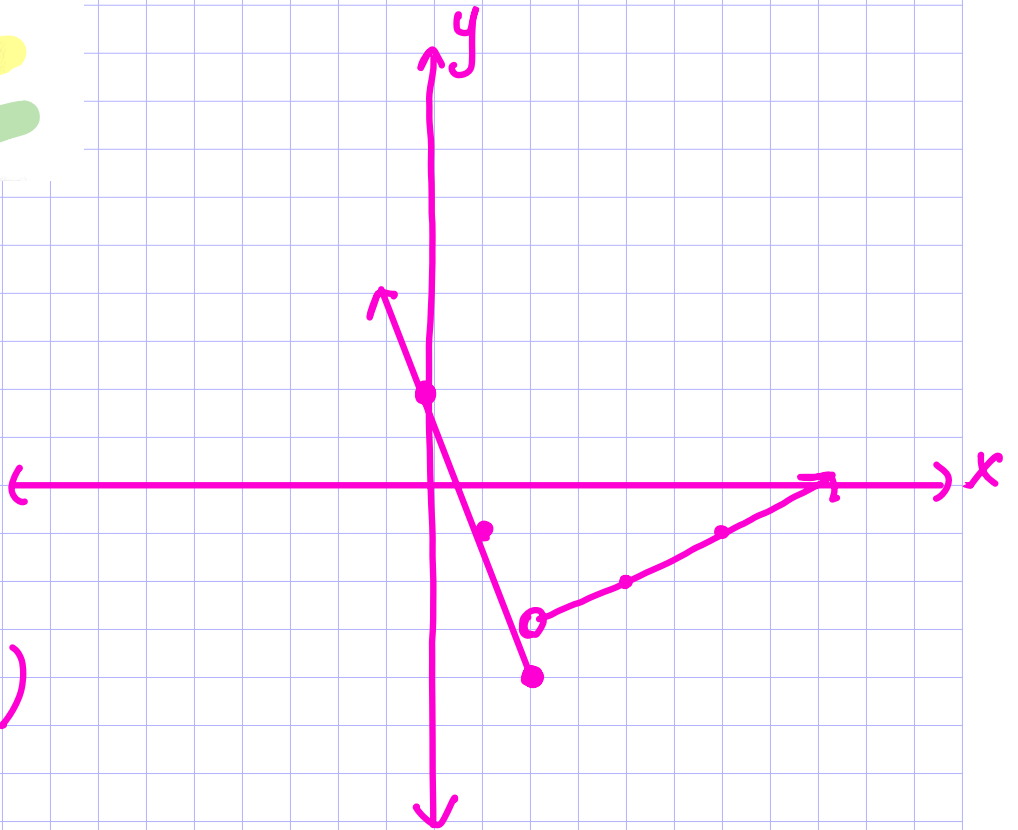
$$D: (-\infty, \infty)$$

$$R: [0, \infty)$$

$$9. h(x) = \begin{cases} -3x + 2, & x \leq 2 \\ \frac{1}{2}x - 4, & x > 2 \end{cases}$$

$$D: (-\infty, \infty)$$

$$R: [-4, \infty)$$



Homework 11-06

4. $f(x) = \begin{cases} x^2 - 1 & x \leq 0 \\ 2x - 1 & 0 < x \leq 5 \\ 3 & x > 5 \end{cases}$

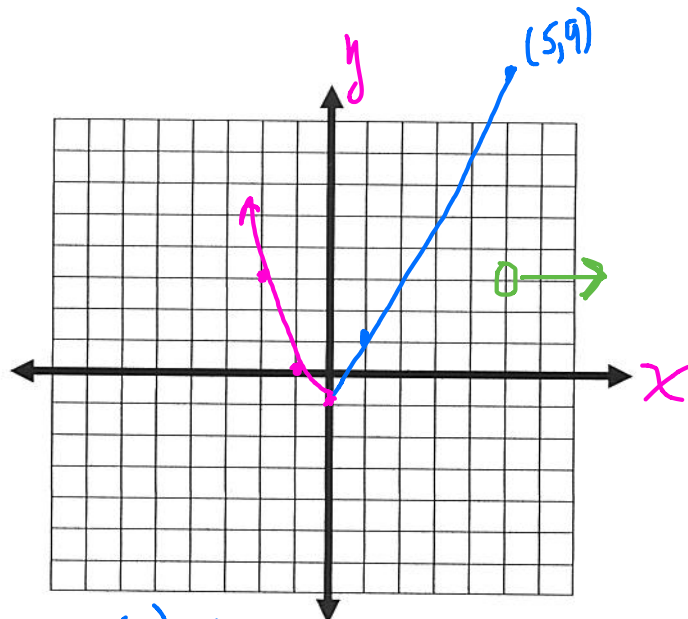
Domain: $(-\infty, \infty)$

Range: $[-1, \infty)$

$f(-2) = 3$

$f(0) = -1$ $0^2 - 1 = -1$

$f(5) = 9$ $(-1)^2 - 1 = 0$
 $(-2)^2 - 1 = 3$



$2(0) - 1 = -1$
 $2(1) - 1 = 1$
 $2(5) - 1 = 9$

5. $f(x) = \begin{cases} x^2 & x \leq 0 \\ -x^2 + 4 & x > 0 \end{cases}$

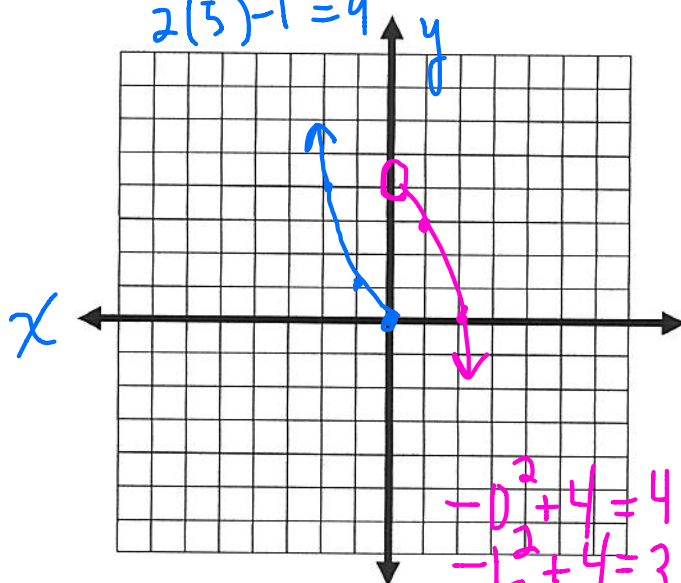
Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

$f(-4) = 16$

$f(0) = 0$

$f(3) = -5$ $0^2 = 0$
 $(-1)^2 = 1$
 $(-2)^2 = 4$



$-0^2 + 4 = 4$
 $-1^2 + 4 = 3$
 $-2^2 + 4 = 0$

6. $f(x) = \begin{cases} 5 & x \leq -3 \\ -2x - 3 & x > -3 \end{cases}$

Domain: $(-\infty, \infty)$

Range: $(-\infty, 3) \cup \{5\}$

$f(-4) = 5$

$f(0) = -3$

$f(3) = -9$

$-2(-3) - 3 = 3$
 $-2(-2) - 3 = 1$
 $-2(-1) - 3 = -1$

