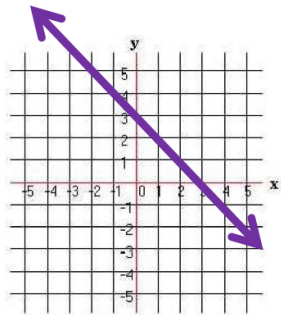


Do Now: #s 10, 11 and 15 from Friday's sheet

Write the equation of the line from graph and also write domain and range. Find x and y -intercepts. Determine whether or not each is a function.

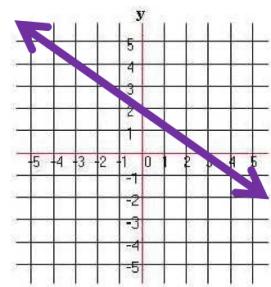
10.



$$y = -x + 3$$

Function
 $D: (-\infty, \infty)$
 $R: (-\infty, \infty)$
 $x\text{-int: } (3, 0)$
 $y\text{-int: } (0, 3)$

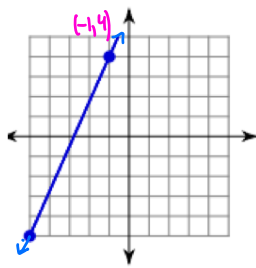
11.



$$y = -\frac{2}{3}x + 2$$

Function
 $D: (-\infty, \infty)$
 $R: (-\infty, \infty)$
 $x\text{-int: } (3, 0)$
 $y\text{-int: } (0, 2)$

15.



$$m = \frac{9}{4}$$

$$y - 4 = \frac{9}{4}(x + 1)$$

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

$$x\text{-int: } \left(-\frac{25}{9}, 0\right) \quad y\text{-int: } \left(0, \frac{25}{4}\right)$$

$$y - 4 = \frac{9}{4}(x + 1)$$

$$x\text{-int (let } y = 0)$$

$$0 - 4 = \frac{9}{4}(x + 1)$$

$$\frac{9}{4} - 4 = \frac{9}{4}(x + 1) \cdot \frac{4}{4}$$

$$-\frac{16}{4} = x + 1$$

$$-\frac{25}{4} = x$$

$$y\text{-int: (let } x = 0)$$

$$y - 4 = \frac{9}{4}(0 + 1)$$

$$y - 4 = \frac{9}{4}$$

$$y = \frac{25}{4}$$

Name: _____

Date: _____

PCH: Piecewise Functions

Ms. Loughran

Part I. Graph each function. Find the domain and range for each piecewise function. Then, evaluate the function at the specified domain value.

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

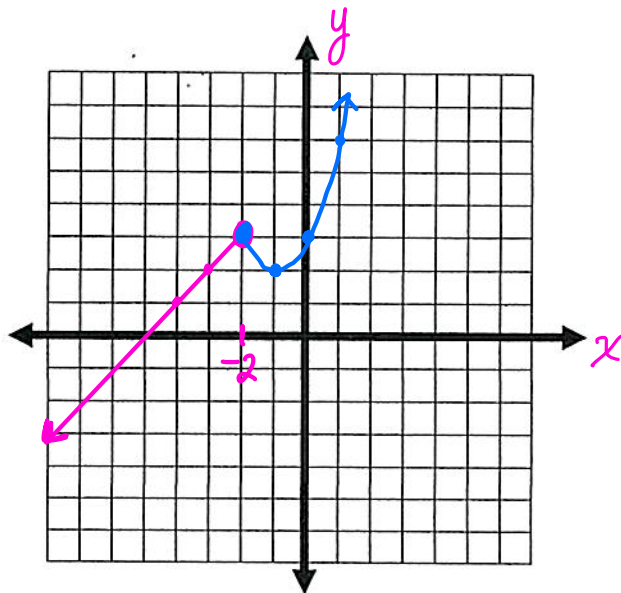
Domain: $(-\infty, \infty)$

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

$f(3) = 3^2 + 2(3) + 3 = 18$

$f(-4) = -4 + 5 = 1$

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



2. $f(x) = \begin{cases} 2x+1 & x \geq 1 \\ x^2 + 3 & x < 1 \end{cases}$

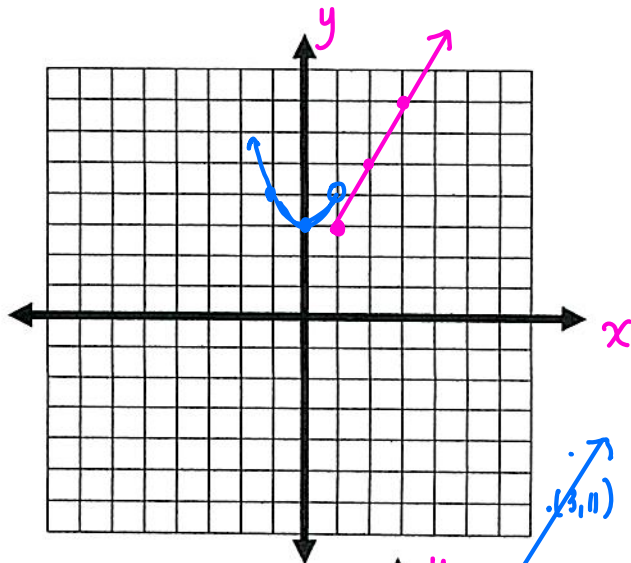
Domain: $(-\infty, \infty)$

Range: $[3, \infty)$

$f(-2) = (-2)^2 + 3 = 7$

$f(6) = 2(6) + 1 = 13$

$f(1) = 2(1) + 1 = 3$



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

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

Range: $[-3, \infty)$

$f(-4) = -2(-4) + 1 = 9$

$f(8) = 5(8) - 4 = 36$

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

