

## Function Review

Evaluate each function using the provided equation.

1)  $p(x) = -2x^3 + 5x$ ; Find  $p(2)$

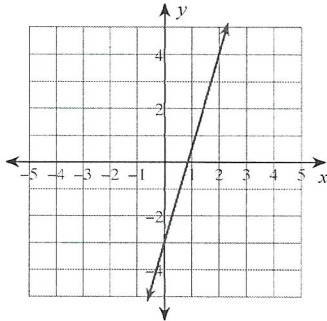
$$-2(2)^3 + 5(2) = \boxed{-6}$$

2)  $g(x) = x^2 + 5x$ ; Find  $g(-4)$

$$(-4)^2 + 5(-4) = \boxed{-4}$$

Evaluate the function  $f(x)$  below at  $f(0)$  and  $f(2)$ .

3)

 $f(0) \rightarrow$  what is the  $y$ -value when the  $x$ -value is 0?

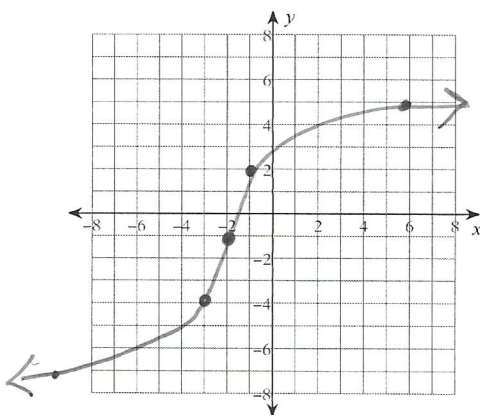
$$f(0) = \boxed{-3}$$

 $f(2) \rightarrow$   $y$ -value when  $x$ -value is 2?

$$f(2) = \boxed{4}$$

Sketch the graph of each function. Give the  $x$  &  $y$ -intercepts, if possible. Then find the domain and range of each.

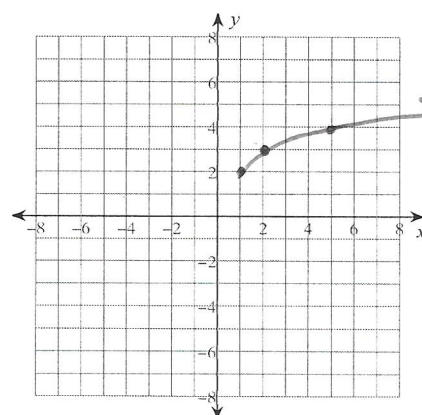
4)  $y = 3\sqrt[3]{x+2} - 1$

 $x$ -int:  $-1.96$  $y$ -int:  $2.78$ 

Domain:

All Reals  
or  
 $(-\infty, \infty)$ Range:  
All Reals  
or  
 $(-\infty, \infty)$ 

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

no  $x$  &  $y$ -intDomain  
 $[1, \infty)$  or  
 $x \geq 1$ Range  
 $[2, \infty)$  or  
 $y \geq 2$ 

Find the slope between the given points.

6) through:  $(-5, -1)$  and  $(-2, 4)$

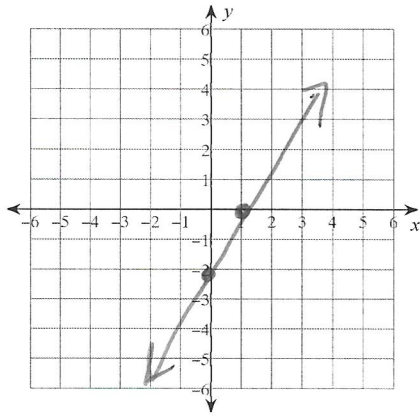
$$\frac{4 - (-1)}{-2 - (-5)} = \frac{4+1}{-2+5} = \boxed{\frac{5}{3}}$$

7) through:  $(2, -4)$  and  $(5, -4)$

$$\frac{-4 - (-4)}{5 - 2} = \frac{-4+4}{3} = \frac{0}{3} = \boxed{0}$$

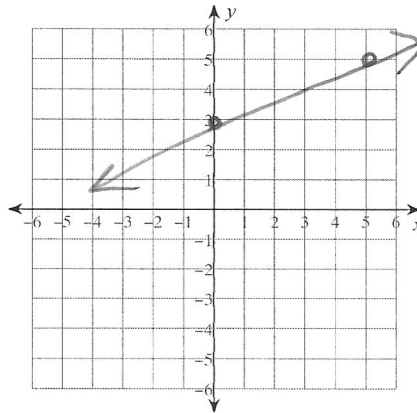
Sketch the graph of each line.

8)  $2x - y = 2$



x-int:  
 $2x = 2$   
 $x = 1$   
 y-int  
 $2(0) - y = 2$   
 $-y = 2$   
 $y = -2$

9)  $y = \frac{2}{5}x + 3$



y-int 3  
 Slope =  $\frac{2}{5}$  up right

Write the slope-intercept form of the equation of the line described.

$y - y_1 = m(x - x_1)$  to  $y = mx + b$

10) through: (1, 5), slope = 7

$y - 5 = 7(x - 1)$   
 $y - 5 = 7x - 7$   
 $y = 7x - 2$

11) through: (3, 3) and (-1, -3)

$m = \frac{-3 - 3}{-1 - 3} = \frac{-6}{-4} = \frac{3}{2}$   
 $y - 3 = \frac{3}{2}(x - 3)$   
 $y - 3 = \frac{3}{2}x - \frac{9}{2}$   
 $m = \frac{3}{2}$   
 $y = \frac{3}{2}x - \frac{3}{2}$

12) through: (4, 5), parallel to  $y = 8x - 4$

parallel means  $m = 8$   
 $y - 5 = 8(x - 4)$   
 $y - 5 = 8x - 32$   
 $y = 8x - 27$

13) through: (1, -5), perp. to  $y = \frac{1}{2}x - 3$

perp means  $m = -2/1$  or  $m = -2$   
 $y - (-5) = -2(x - 1)$   
 $y + 5 = -2x + 2$   
 $y = -2x - 3$

Solve each equation by factoring or by using square roots.

14)  $2a^2 - 12a = 0$  GCF

$2a(a - 6) = 0$   
 $2a = 0$   $a - 6 = 0$   
 $a = 0$   
 $a = 6$

15)  $6n^2 = 54$

$n^2 = 9$   
 $n = \pm\sqrt{9}$   
 $n = \pm 3$   
 or  $6n^2 - 54 = 0$   
 $6(n^2 - 9) = 0$   
 $6(n + 3)(n - 3) = 0$

16)  $x^2 - 5x + 4 = 0$

$(x - 4)(x - 1) = 0$   
 $x = 4$   $x = 1$

17)  $a^2 - 9a + 14 = 0$

$(a - 2)(a - 7) = 0$   
 $a = 2$   $a = 7$

Solve each equation by using your graphing calculator solver or by graphing. Give answers to two decimal places if necessary.

18)  $8p^2 + 9p - 5 = 0$

I used Pysmit2 app

$p = .41$  or  $-1.53$

19)  $2n^3 - 4n^2 - 6n = -2x - 4$

$n = -1.17, 0.69, 2.48$

I graphed one side as  $y_1$  and one as  $y_2$  and found intersect