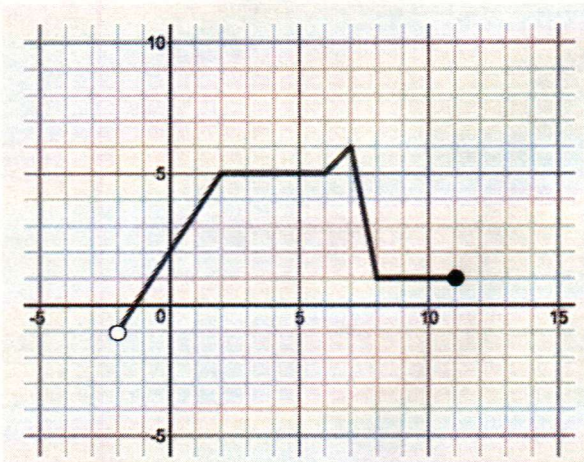


Unit 3 Test Review – Feature of Functions - Answers are posted on my website:
 mspedmath.weebly.com

1.



x – intercepts: $(-1\frac{1}{2}, 0)$

y – intercept: $(0, 2)$

Maximum: $(7, 6)$

Minimum: none

Intervals of Increase:

$(-2, 2) \cup (6, 7)$

Intervals of Decrease:

$(7, 8)$

Constant Intervals:

$(2, 6) \cup (8, 11)$

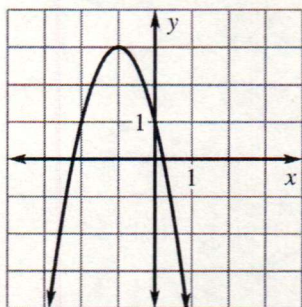
Domain:

$(-2, 11]$

Range:

$(-1, 6]$

2.



x – intercepts: $(-2\frac{1}{4}, 0)$ and $(\frac{1}{4}, 0)$

y – intercept: $(0, 1)$

Maximum: $(-1, 3)$

Minimum: none

Intervals of Increase:

$(-\infty, -1)$

Intervals of Decrease:

$(-1, \infty)$

Constant Intervals:

none

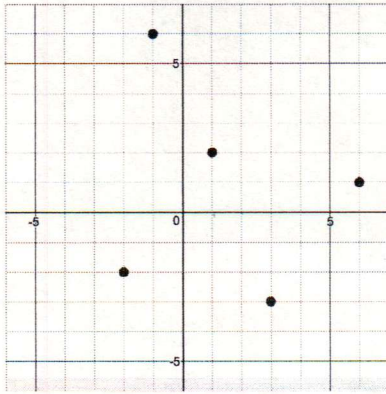
Domain:

\mathbb{R}

Range:

$(-\infty, 3]$

3.



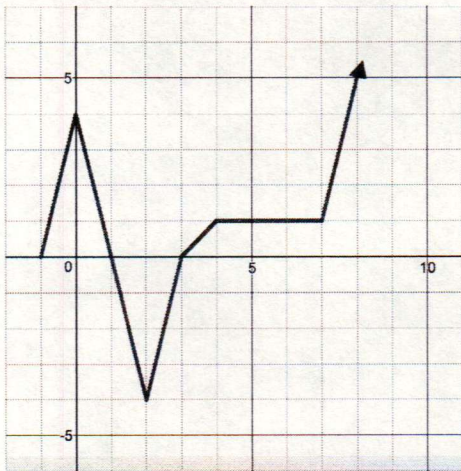
Domain: $x = -2, -1, 1, 3, 6$

Range: $y = -3, -2, 1, 2, 6$

Maximum: $(-1, 6)$

Minimum: $(3, -3)$

4.



Intervals of Increase:

$(-1, 0) \cup (2, 4) \cup (7, \infty)$

Intervals of Decrease:

$(0, 2)$

Constant Intervals:

$(4, 7)$

Domain:

x - intercepts: $(-1, 0), (1, 0), (3, 0)$ $[-1, \infty)$

y - intercept: $(0, 4)$

Maximum: $(0, 4)$

Minimum: $(-1, 0), (2, -4)$

Range:

$[-4, \infty)$

5. Use the graph for #4 to find the following.

a) $f(0) = 4$

b) $f(6) = 1$

c) $f(x) = -4, x = 2$

d) $f(x) = 0, x = -1, 1, 3$

6. Use the given functions, determine the values of each of the following and then write as ordered pairs.

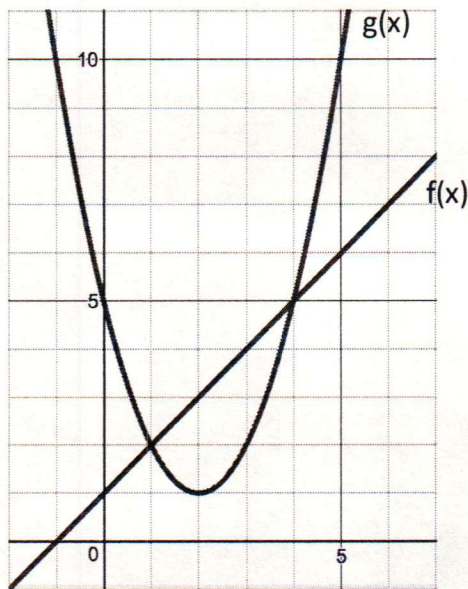
$$f(x) = 3x - 2 \text{ and } g(x) = -x + 5$$

a) $f(-5) = 3(-5) - 2$
 $= -15 - 2$
 $f(-5) = -17$
 $(-5, -17)$

b) $g(6) = -(6) + 5$
 $= -6 + 5$
 $g(6) = -1$
 $(6, -1)$

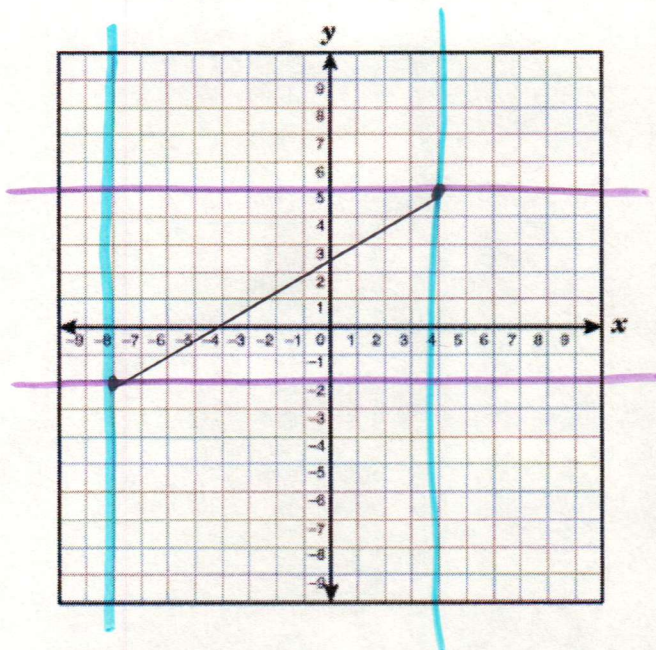
c) $f(0) = 3(0) - 2$
 $= 0 - 2$
 $f(0) = -2$
 $(0, -2)$

7. Use the given graph to determine the values of each of the following.



- a) Find $f(0) = \underline{2}$
- b) Find $g(0) = \underline{6}$
- c) When $g(x) = 5$, then $x = \underline{0, 4}$
- d) Where does $g(x) = f(x)$? $(1, 3) \text{ and } (4, 5)$
- e) On what interval is $f(x) > g(x)$?
 $(1, 4)$

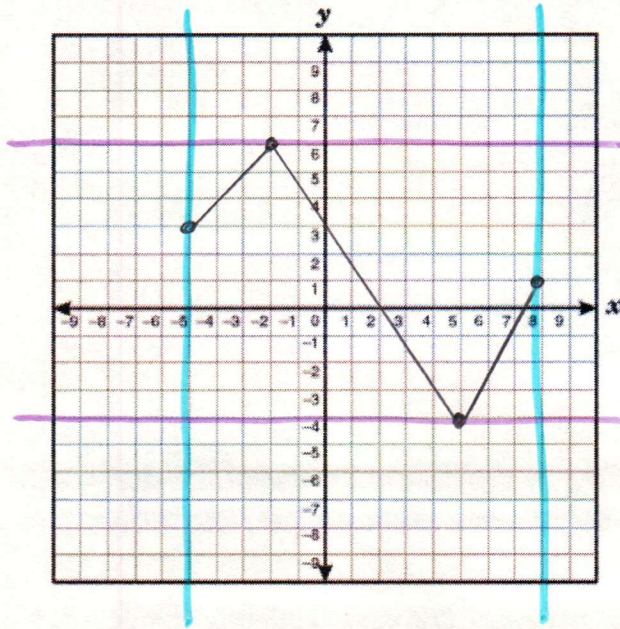
8. Draw a graph of a function with the given domain and range.



Domain: $[-8, 4]$

Range: $[-2, 5]$

9. Draw a graph of a function with the following features.



Domain: $[-5, 8]$

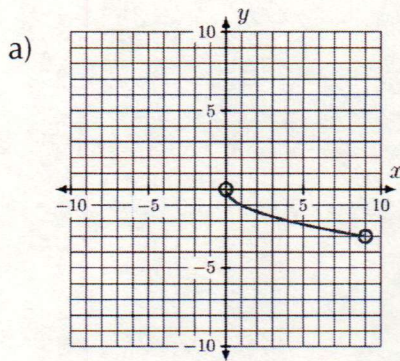
Range: $[-4, 6]$

Interval of Decrease: $(-2, 5)$

Maximum: $(-2, 6)$

Minimum: $(5, -4)$

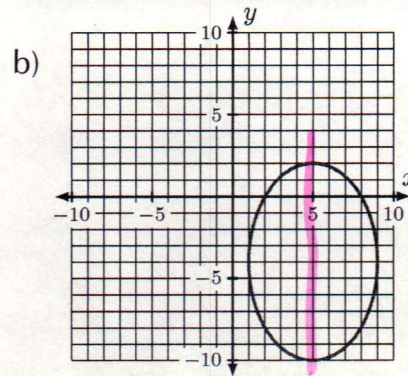
10. Find the domain, range, and determine if it is a function and show where it fails if it is not.



Domain: $(0, 9)$

Range: $(-3, 0)$

Function?: *yes*



Domain: $[-1, 9]$

Range: $[-10, 2]$

Function?: *no*

c)

x	2	4	3	2
y	1	2	3	4

Domain: $x = 2, 3, 4$

Range: $y = 1, 2, 3, 4$

Function?: *no*

$x = 2$ goes to $y = 1 \neq y = 4$

d)

x	2	4	3	2
y	4	2	3	4

Domain: $x = 2, 3, 4$

Range: $y = 2, 3, 4$

Function?: *yes*