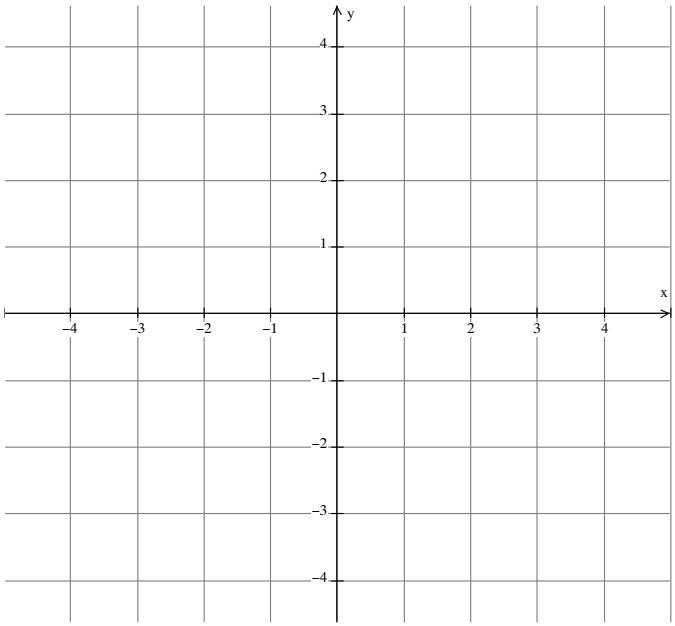
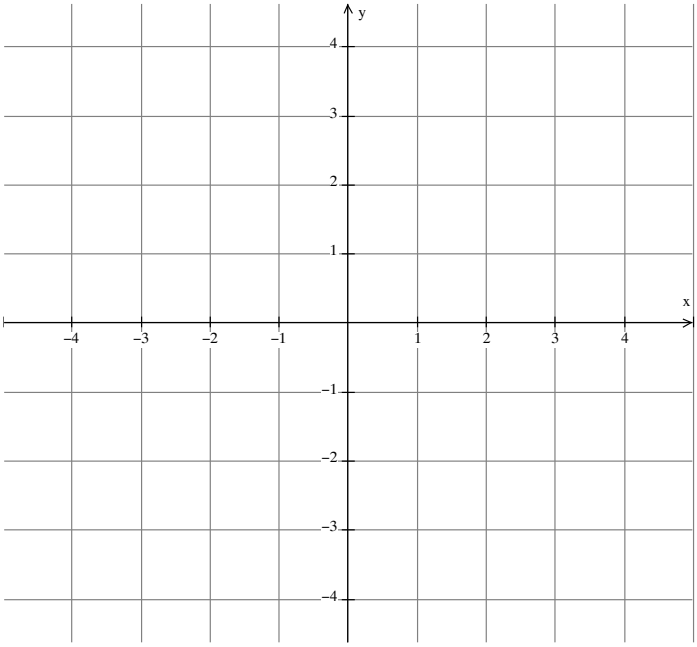
Review for Assessment 1

Section 2.1

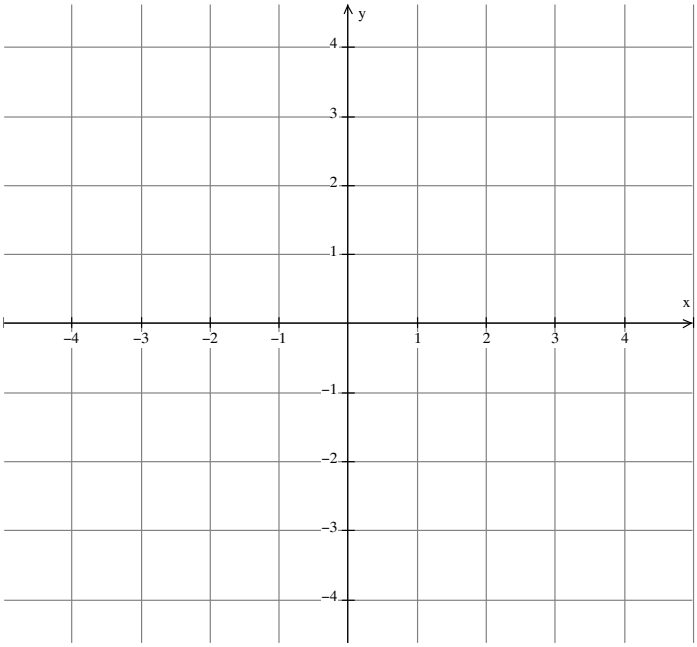
1. Graph the following points: (2, 1), (-3, 4), (-2, -3), (0, 3), and (2, -3)



2. Graph the equation y = 2x – 3. Find the x and y intercepts both graphically and algebraically.



3. Graph the equation $y = 3 - 2x - x^2$. Find the x and y intercepts graphically.



4. Find the distance and the midpoint between (-3, 4) and (2, -5).

Section 2.2

5. Solve the following equations:
    a. $3x + 2 = -2x + 4$

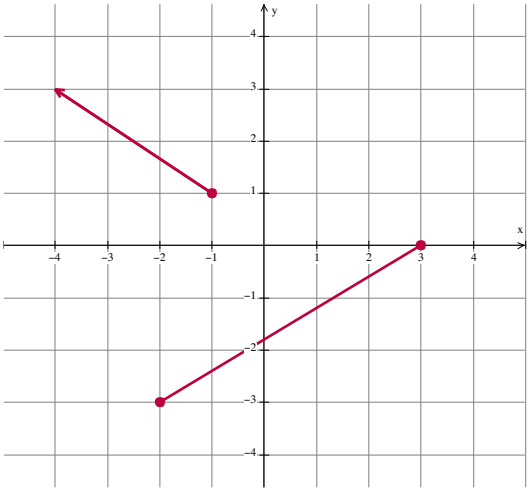
b. $\frac{2x+1}{x-2} = 4$

c. $2 + \frac{3x-1}{1-x} = \frac{2}{1-x}$

Section 3.1

6. Is y a function of x in the relation R. Why or why not?
   R = {(2, 3), (3, 3), (-2, 4), (2, 7)}

7. Is this a graph of a function? Why or why not?



8. Are the following equations functions? Why or why not?
   a. $y = 3x - 3$

   b. $-3x + 7y = 14$

   c. $3x = y^2$

9. Let $g(x) = 3x^2 + 2$. Find the following values:
   a. $g(2)$

   b. $g(0)$

   c. $g(-3)$

10. Let h(x) = 5x + 3. Solve the following equations:
    a. h(x) = 0

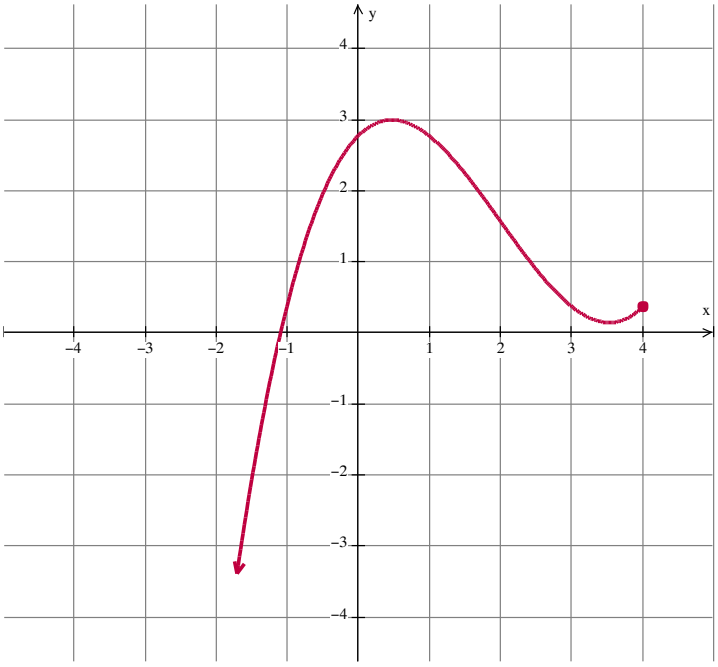
    b. h(x) = -5

    c. h(x) = 7

Section 3.2

11. Find the domain and range of the function F.
    F = {(0, 1), (-2, 3), (-23, -42), (3, 7), (25, 3.4)}

12. Find the domain and range of the graphed function.



13. Find the domain for the following functions.

a. f(x) = $\frac{3}{4}x + 2$

b. g(x) = $\frac{x^2+4}{x+3}$

c. h(x) = $\sqrt{3x-4}$

d. f(x) = $\frac{x+4}{2x-7} + \sqrt{3x+1}$

14. Let $f(x) = \begin{cases} 3x & x < -1 \\ 2x+1 & -1 \leq x < 4 \\ x-2 & 4 \leq x \end{cases}$ Find the following values:

a. f(5)

b. f(0)

c. f(-3)

d. f(4)

e. Sketch a graph of f(x)

15. The height above the water of a ball dropped from a bridge is given by the function $h(t) = -9.8t^2 + 60$, where h(t) is in meters and t is in seconds.
    a. Find and interpret h(2).

    b. Solve and interpret h(x) = 0.

    c. How high is the ball after 1 second?

    d. When is the ball 30 meters above the water?

    e. What is a reasonable domain for h(t)?

    f. Sketch a graph of h(t).

16. The cost of a data plan is modeled by the following function

$$C(d) = \begin{cases} 30 & 0 \leq d \leq 1 \\ 15(d-1) + 30 & d > 1 \end{cases}$$

Where C(d) is the cost per month in dollars and d is the amount of data in gigabytes.

a. Find and interpret C(2).

b. Solve and interpret C(d) = 200.

c. How much would it cost to use 5 GB in a month?

d. How much data can you use for $60?

e. Sketch a graph of C(d).