

Math 110 Covers: 8.4, 9.3, 11.1-11.3

1. Given the following functions:

$$f(x) = \frac{2x}{2x^2 + 5x - 3} \qquad g(x) = \sqrt{2x + 8}$$

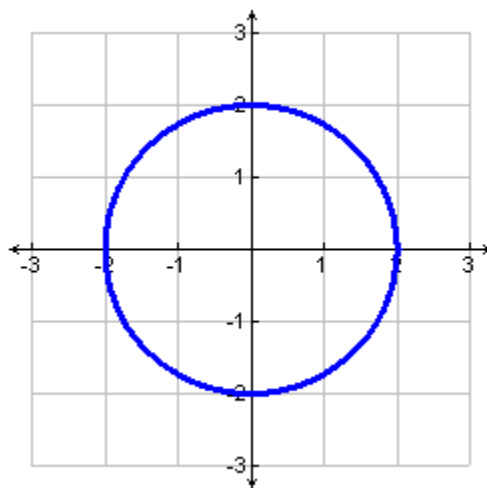
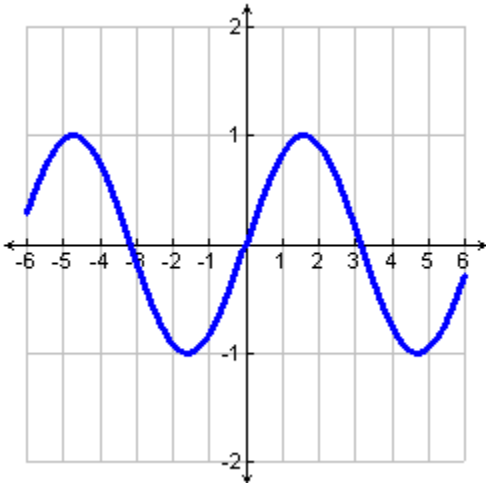
Find the domain of

a. $f(x)$

b. $g(x)$

c. $(f - g)(x)$

2. Determine whether each of the following is the graph of a function.

3. Given $F(x) = x^2 + 4x - 1$ and $G(x) = 3x + 2$. Find the following

a. $(F - G)(2)$

b. $(F + G)(x)$

c. $(F / G)(-1)$

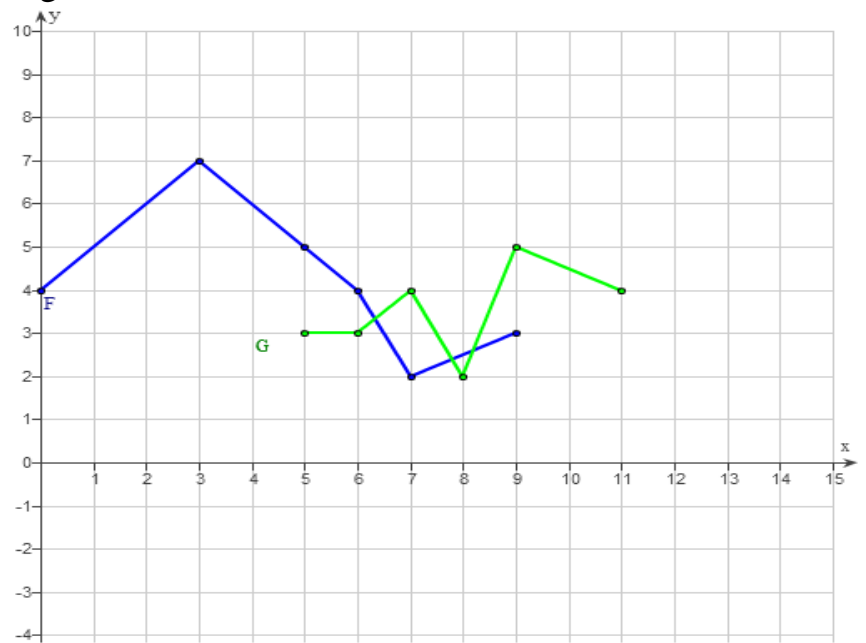
4. Using the graphs given, find the following:

a. $F(3) =$

b. $(F \cdot G)(6) =$

c. $(F - G)(7)$

d. $(G / F)(5)$



e. Find the domains of $F + G$, $F - G$, $F \cdot G$

5. Solve using matrices by hand:

$$7x - 6y = 20$$

$$4x + 3y = 5$$

6. Solve the system of equations using matrices (on the calculator):

$$y + 2z = 1$$

$$x + y + 2z = -1$$

$$2x + 11y + 2z = 10$$

7. Solve using elimination:

$$3x + 2y + z = 4$$

$$2x - 3y + 2z = -7$$

$$x + 4y - z = 10$$

8. Solve the following system of equations using matrices by hand:

$$x + y + z = 2$$

$$2x - y + z = 5$$

$$-x - y + z = 8$$

9. A collection of 67 coins consist of dimes and quarters. The total value is \$13.60. How many quarters and dimes are there?

10. One month Bill and Joni spent \$920 for electricity, rent and cell phone. The electric bill was $\frac{1}{4}$ the amount of the rent, and the phone bill was \$40 less than the electric bill. How much was the rent?

11. The juice company offers three kinds of smoothies: Midnight Mango, Tropical Torrent, and Pineapple Power. Each smoothie contains the amounts of juices shown in the table:

Smoothie	Mango juice (oz)	Pineapple juice (oz)	Orange juice (oz)
Midnight Mango	8	3	3
Tropical Torrent	6	5	3
Pineapple Power	2	8	4

On a particular day the juice company used 820 oz of mango juice, 690 oz of pineapple juice and 450 oz of orange juice. How many smoothies of each kind were sold that day?