1. For the linear function $f(x)=2x-5$,
   a. Determine the slope and y-intercept.

   $M=2$ $y\text{-int}\ (0,-5)$

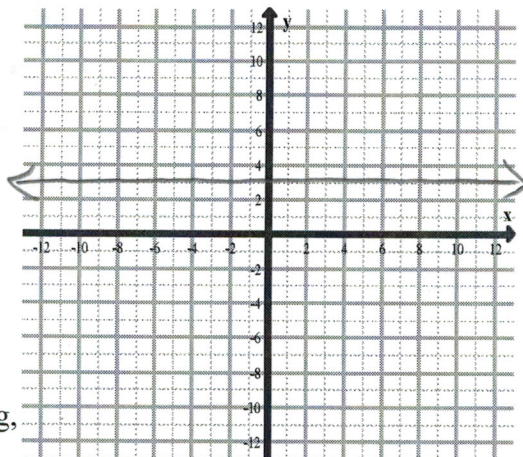   b. Use the slope and y-intercept to graph the linear function.
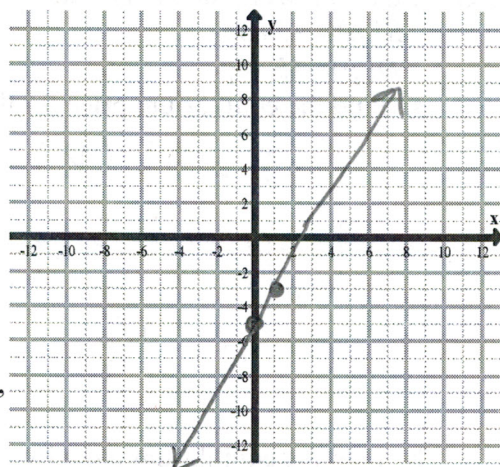
   c. Determine the average rate of change.

   $ARC = 2$

   d. Determine whether the linear function is increasing, decreasing, or constant.

   $m>0$ Increasing

2. For the linear function $g(x)=-\dfrac{3}{5}x+1$,

   a. Determine the slope and y-intercept.

   $m=-\dfrac{3}{5}$ $(0,1)$

   b. Use the slope and y-intercept to graph the linear function.
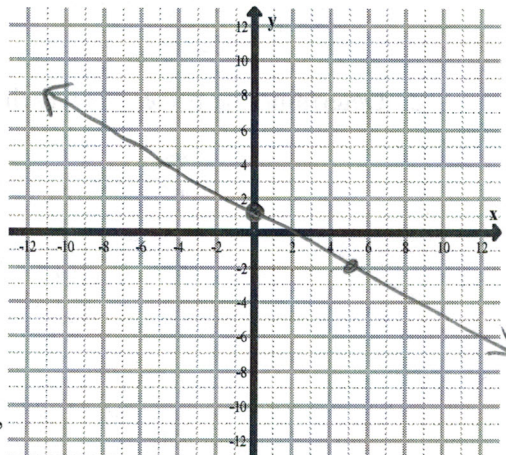
   c. Determine the average rate of change.

   $ARC = -\dfrac{3}{5}$

   d. Determine whether the linear function is increasing, decreasing, or constant.

   $m<0$ decreasing

3. For the linear function $h(x)=3$,
   a. Determine the slope and y-intercept.

   $m=0$ $(0,3)$

   b. Use the slope and y-intercept to graph the linear function.

   c. Determine the average rate of change.

   $ARC = 0$

   d. Determine whether the linear function is increasing, decreasing, or constant.

   constant

4. Suppose that the quantity supplied S and quantity demanded D of hotdogs at a baseball game are given by the following functions where p is the price.

$$S(p)=-9+3p$$
$$D(p)=45-6p$$

a. Find the equilibrium price for the hotdogs at the baseball game.

$$S(P) = D(P)$$

$$-9+3p = 45-6P$$
$$+6P \qquad +6P$$
$$-9+9p = 45$$
$$+9 +9$$

$$\frac{9p}{9} = \frac{54}{9}$$
$$p = 6$$

b. Find the equilibrium quantity.

$$S(6) = -9+3(6)$$
$$= -9+18 = 9$$

c. Determine the prices for which the quantity demanded is greater than the quantity supplied.

$$D(P) > S(P)$$
$$45-6p > -9+3p$$
$$-3p \qquad -3p$$

$$45- P > -9$$
$$-45 -45$$

$$\frac{-9p}{-9} > \frac{-54}{-9}$$
$$p < 6$$