

## Linear Functions

1. Define the following terms:

a) slope \_\_\_\_\_

b) y-intercept \_\_\_\_\_

c) x-axis \_\_\_\_\_

d) coordinate plane \_\_\_\_\_

e) linear function \_\_\_\_\_

2. Determine the following information:

a) slope and y-intercept of the equation  $-5x + 2y = 7$

b) the slope of the line segment joining the points  $(-7, 3)$  and  $(4, 8)$

c) the midpoint of the line segment defined by having endpoints of  $(3, -8)$  and  $(11, 4)$

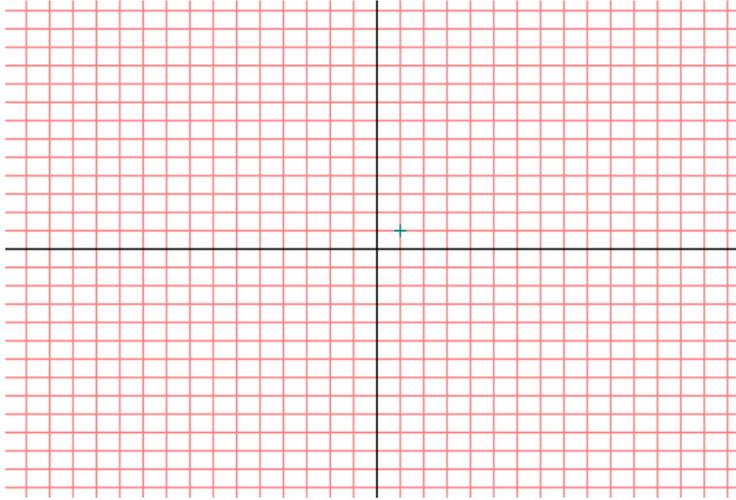
d) the distance between the points  $(-4, 7)$  and  $(-3, -9)$

e) the slope of a line that is parallel to the line with equation  $4x - 7y = 11$

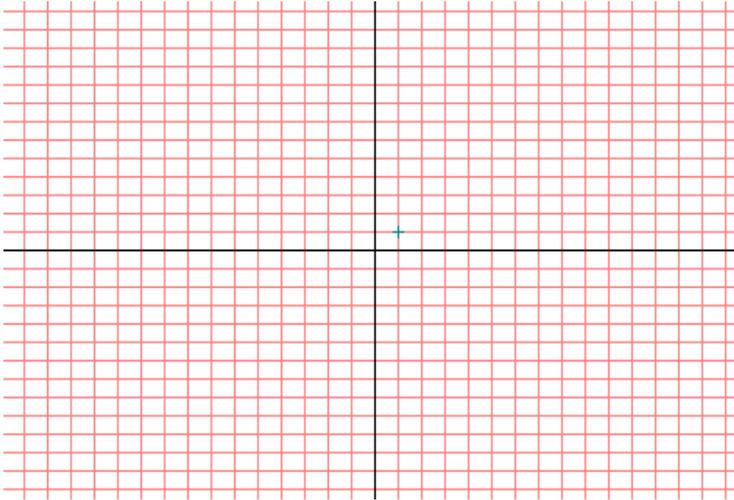
f) the slope of the line perpendicular to another line that has a slope of  $5/7$

3. Graph the following equations using the indicated method:

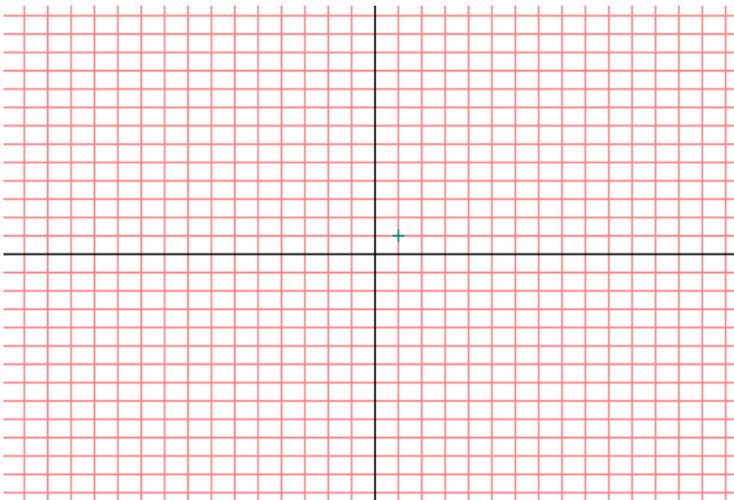
a) Table of values:  $4x - 2y = -8$



b) Intercept method:  $-5x + 3y = 15$



c) Slope intercept method:  $2x + 3y = 12$



4. Determine the equation of the line given the following information:

a)  $m = -5$  and  $b = 3$

b)  $m = -3/4, b = 2$

c)  $m = 5/7$  passing through  $(0, -4)$

d)  $m = -3$  passing through  $(-3, 4)$

e)  $m = -5/3$  passing through  $(-2, -6)$

f) passing through the points  $(-3, 5)$  and  $(-1, 6)$

g) through  $(5, 2)$  parallel to  $3x - 2y = 6$

h) through  $(-3, 5)$  perpendicular to  $-4x + y = 6$

i) through the point  $(3, -7)$  and parallel to the x-axis

j) through the point  $(-4, -6)$  and perpendicular to the x-axis

k) through  $(3, -2)$  parallel to the line passing through  $(4, 8)$  and  $(6, 16)$

l) through  $(-5, 1)$  perpendicular to the line passing through  $(-5, 2)$  and  $(5, 6)$

m) perpendicular bisector of the line segment defined by the endpoints  $(3, 2)$  and  $(-9, 10)$