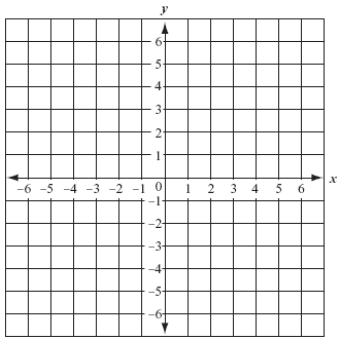
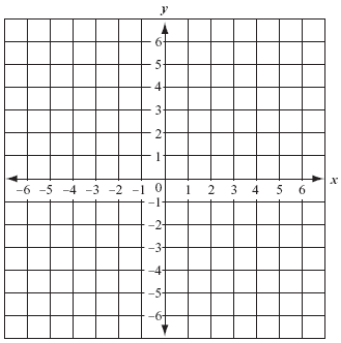
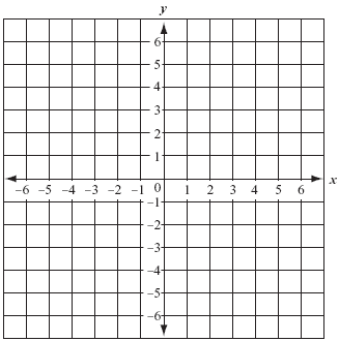
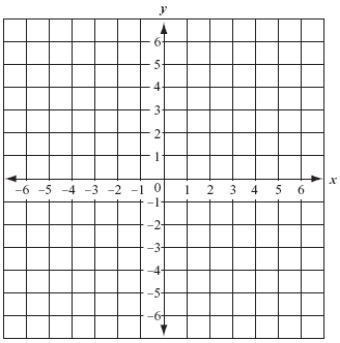
Scarsdale Middle School **Popham House 8-2/3** **Mr. Weiss**

Unit: Coordinate Geometry II.

$$\textbf{Slope} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

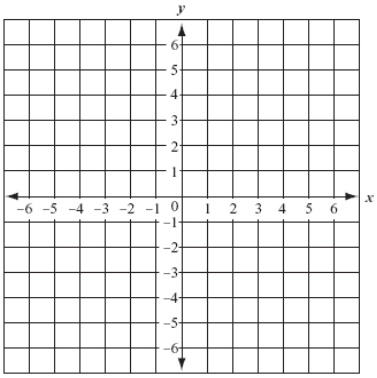
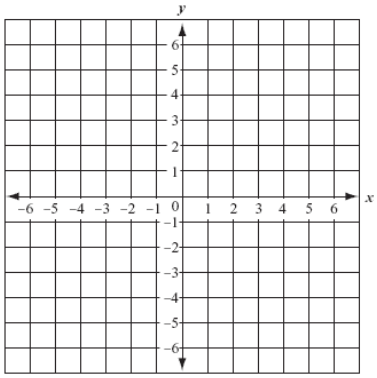
1) Find the slopes of the line whose equations are:

a) $y = -2x + 5$? b) $2x - 3y = 12$? c) $y = 4$? d) $x = -3$?

2) Graph the lines with the following conditions:

a) y-intercept = –4 slope = $\frac{3}{2}$ b) y-intercept = 3 slope = –2

3) What is the slope of the line that passes through the points:

a) (–3, 4) and (3, 2) b) (0, 7) and (–2, 1)

4) The slope of line AB is $\frac{2}{3}$. The coordinates of A are (–2, 5) and the coordinates of B are (–14, k).

What is the value of k?

5) The slope of line AB is $-\frac{5}{3}$. The coordinates of A are (5, 6) and the coordinates of B are (k, 1). What is the value of k?

6) Lines AB and CD are parallel. The slope of line AB is $\frac{4}{7}$. The slope of line CD is $\frac{-12}{k}$. What is the value of k?

7) Lines AB and CD are perpendicular. The slope of line AB is 3. What is the slope of line CD?

8) Lines AB and CD are perpendicular. The slope of line AB is $-\frac{5}{8}$. What is the slope of line CD?

9) Lines AB and CD are perpendicular. The slope of line AB is $\frac{2}{5}$. The slope of line CD is $\frac{k}{8}$. What is the value of k?

Equation of a line

slope-intercept form: $\boldsymbol{y = mx + b}$ (m = slope, b = y-intercept)

10) Find the slope and y-intercept of the line whose equation is

a) $y = -2x + 5$

b) $2x - 3y = 12$

c) $4x + 5y = 20$

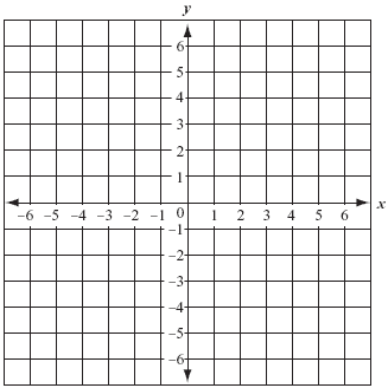
d) $x + y = 6$

e) $y = -7$

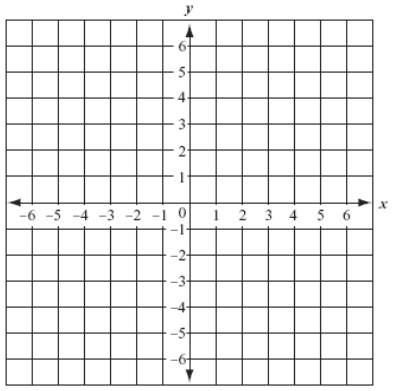
f) $x = -1$

11) Graph each line using slope and y-intercept.

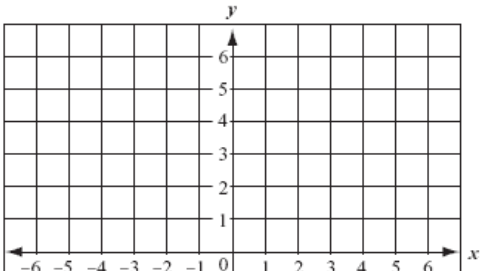
a) $y = 3x - 7$



b) $2y + 3x = 8$



c) $5x - 6y = -30$



Writing the equation of a line.

12) Write the equation in slope-intercept form of the line with the following conditions:

a) slope = 3, y-intercept = –5

b) passes through the point (–2, –1) with a slope of –3.

c) passes through the point (6, –5) with a slope of $-\frac{3}{2}$.

d) passes through the points (4, 7) and (–2, 4)

e) passes through the points (2, –3) and (–6, 1).

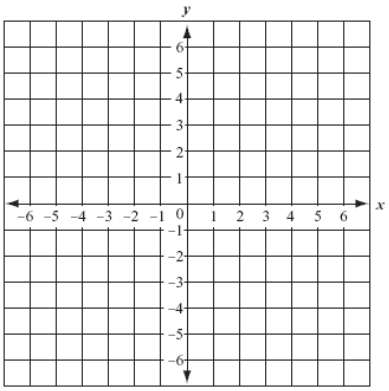
f) parallel to the line whose equation is $8x - 4y = 20$ and passes through the point (1, 6).

g) perpendicular to the line whose equation is $y = 4x + 7$ and passes through the point (–4, –3).

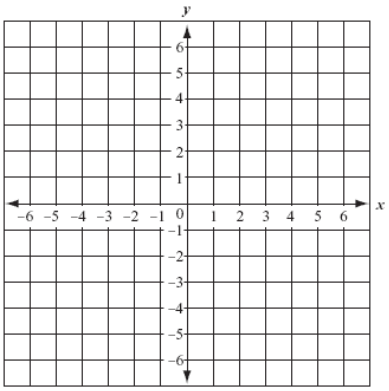
Graphing inequalities.

15) Graph each inequality. Name a point in the solution set.

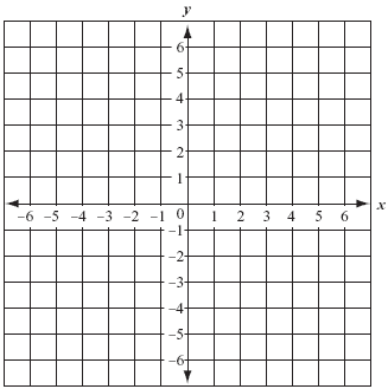
a) $x > -4$



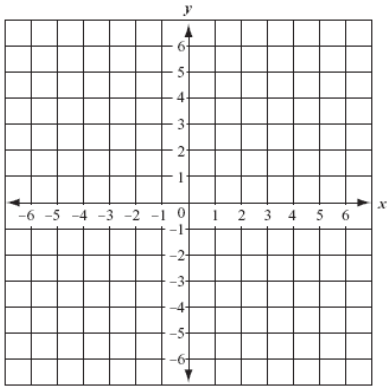
b) $y \leq 3$



c) $y \leq x + 4$



d) $y < \frac{2}{3}x - 5$



e) $2x - 4y > 12$