Name: Corrections Date: _____ Block: _____

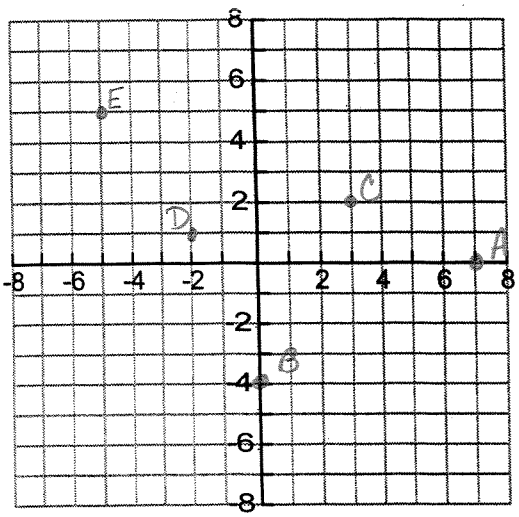
Coordinate Geometry Review 2005

Part A: Basics.

1. Plot and label the following points.

   A (7, 0)
   B (0, -4)
   C (3, 2)
   D (-2, -1)
   E (-5, 5)

   What is the point (0, 0) called? Origin



2. Determine 3 points that will lie on the graph of the line (create a table)
   $y = -2x + 3$

x	y
0	3
1	1
2	-1

3. Determine the x-intercepts and y-intercepts of the line $5x - 8y = 10$

x	y
0	$-5/4$ (y-int)
2	0 (x-int)

Part B: Length of a segment and midpoint of a segment.

a) Find the length of a segment from (-4, -2) to (-10, 12).

$$\ell = \sqrt{(-4+10)^2 + (-2-12)^2}$$

$$\ell = 15.2$$

b) Find the midpoint of a segment which has the endpoints of (-11, -7) and (3, 9)

$$M = \left(\frac{-11+3}{2}, \frac{-7+9}{2}\right) = (-4, 1)$$

c) Given that one endpoint of a segment is (-8, 6) and knowing that the midpoint of the segment is (-2, -5), find the other endpoint.

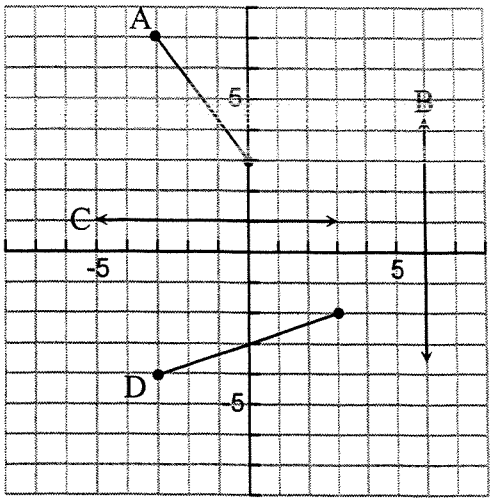
$$\frac{-8+x}{2} = -2 \qquad \frac{6+y}{2} = -5 \qquad \therefore (4, -16)$$

$$-8+x = -4 \quad \therefore x = 4 \qquad 6+y = -10$$

$$y = -16$$

Part C: Give the Slope of the following:

1. Determine the slopes and equations of the lines that are provided on the grid to the right.



Line	Slope	Equation
A	$-\frac{4}{3}$	$y=-\frac{4}{3}x+3$
B	$\emptyset$	$x=6$
C	0	$y=1$
D	$\frac{1}{3}$	$y=\frac{1}{3}x-3$

2. Determine the slope of the line containing the following points.

a) (-4, 10) & (-8, 11)

$m=\frac{11-10}{-8+4}$

$m=\frac{1}{-4}$

b) (-6, -20) & (6, -20)

$m=\frac{-20+20}{6+6}$

$m=\frac{0}{12}$

$m=0$

c) (12, -4) & (7, 4)

$m=\frac{4+4}{7-12}$

$m=\frac{8}{-5}$

Part D: Parallel & Perpendicular Lines

1. Two sets of points are given for a given line. Circle the ones that are parallel.

A) (0,5) & (6, 7)

$m=\frac{2}{6}$

$m=\frac{1}{3}$

B) (4, -2) & (-2, 1)

$m=\frac{3}{-6}$

$m=-\frac{1}{2}$

C) (-1, -6) & (-7, -8)

$m=\frac{-2}{-6}$

$m=\frac{1}{3}$

2. Given the following slopes, give their perpendicular slopes:

a) -5 $\perp$ $\frac{1}{5}$

b) $\frac{3}{7}$ $\perp$ $-\frac{7}{3}$

Part E: Linear Equations. Write the equation of the line using the information given.

1. Through (12, -2) with a slope of $-\frac{4}{3}$

$y = -\frac{4}{3}x + b$

$-2 = -\frac{4}{3}(12) + b$

$-2 = -16 + b$

$14 = b$

$\therefore y = \frac{-4}{3}x + 14$

2. Through the points (4, 7) & (2, -1)

$m = \frac{-8}{-2}$

$m = 4$

$\therefore y = 4x + b$

$7 = 4(4) + b$

$7 - 16 + b$

$-9 = b$

$\therefore y = 4x - 9$

3. (7, -3) and parallel through the line $y = \frac{-7}{8}x - 3$

$m = \frac{-7}{8}$

$\therefore y = -\frac{7}{8}x + b$

$-3 = -\frac{7}{8}(7) + b$

$\therefore b = \frac{25}{8}$

$\therefore y = \frac{-7}{8}x + \frac{25}{8}$

4. (9, 4) and perpendicular to the line $y = -3x + 1$

$m = \frac{1}{3}$

$\therefore y = \frac{1}{3}x + b$

$4 = \frac{1}{3}(9) + b$

$1 = b$

$\therefore y = \frac{1}{3}x + 1$

5. Rewrite the equation $-3x - 6(y - 2x) = 10$ in standard form as well as slope-intercept form.

$-3x - 6y + 12x = 10$

$9x - 6y - 10 = 0$

Standard Form

$9x - 10 = 6y$

$\frac{9}{6}x - \frac{10}{6} = y$

$\frac{3}{2}x - \frac{5}{3} = y$ Slope-Intercept

6. Given that one endpoint on a line segment is (21, 10) and the other endpoint is (3, 22), divide the segment into 3 equal parts.

$M_1 = \left(\frac{24}{2}, \frac{32}{2}\right)$

$M_1 = (12, 16)$

$M_2 = \left(\frac{33}{2}, \frac{26}{2}\right)$

$M_2 = \left(\frac{16.5}{2}, 13\right)$

$M_3 = \left(\frac{15}{2}, \frac{38}{2}\right)$

$M_3 = (7.5, 19)$