

Name: key

Date: _____

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Review Analytical Geometry

Part A: Basics.

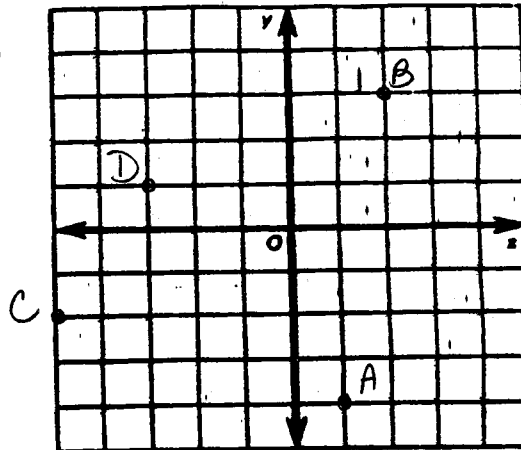
3. Plot and label the following points.

A (1, -4)

B (2, 3)

C (-5, -2)

D (-3, 1)



4. Determine 3 points that will lie on the graph of the line (create a table)

$y = 2x - 5$

x	y
0	-5
1	-3
2	-1

3. Determine the x-intercepts and y-intercepts of the line $4x - 5y = 20$

x	y
0	-4 (y-int)
5	0 (x-int)

Part B: Give the Slope of the following:

1. Give the slope of the following:

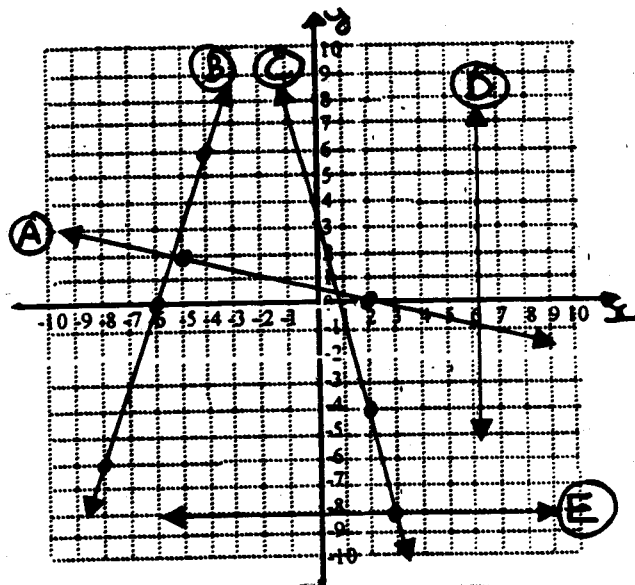
A $-\frac{2}{7}$

B 3

C -4

D \emptyset

E 0



2. Give the equation of line D $x = 6.2$

3. Give the equation of line E $y = -8$

2. Rewrite the equation $3x - 2(y - 2x) = 6$ in slope-intercept form.

$$3x - 2y + 4x = 6$$

$$7x - 2y = 6$$

$$7x - 6 = 2y$$

$$\frac{7}{2}x - 3 = y$$

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

1. slope is $\frac{1}{5}$ and y-intercept is -3 .

$$y = \frac{1}{5}x - 3$$

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

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

$$-2 = -16 + b$$

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

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

$$\textcircled{1} m = \frac{8}{2} = 4$$

$$\textcircled{2} y = 4x + b$$

$$\textcircled{4} y = 4x - 9$$

$$\textcircled{3} -1 = 4(2) + b$$

$$-9 = b$$

4. $(7, -3)$ and parallel through the line $y = \frac{-7}{8}x - 3$

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

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

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

5. $(9, 4)$ and perpendicular to the line $y = 3x + 1$

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

$$\therefore y = -\frac{1}{3}x + 7$$

$$4 = -3 + b$$

$$7 = b$$

6. Parallel to $4x - 3y = 12$ and the same y-intercept as $5x + 15y - 25 = 0$

$$4x - 12 = 3y$$

$$15y = 25$$

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

$$y = \frac{25}{15}$$

$$y = \frac{5}{3}$$

$$\therefore y = \frac{4}{3}x + \frac{5}{3}$$

5. Calculate the slope of the line containing the following points.

<p>a) (2, -8) & (2, 3)</p> $m = \frac{3+8}{2-2}$ $m = \emptyset$	<p>b) (4, 6) & (6, -4)</p> $m = \frac{-4-6}{6-4}$ $m = -5$	<p>c) (12, -4) & (12, 4)</p> $m = \frac{4+4}{12-12}$ $m = \emptyset$
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Part C: Midpoint and Length.

g) Find the length of a segment from (-4, 3) to (6, -4):

$$L = \sqrt{(6+4)^2 + (-4-3)^2} = \sqrt{100+49} = \sqrt{149} = \underline{\underline{12.21}}$$

h) Find the midpoint of a segment which has the endpoints of (3, -1) and (-5, 7)

$$M = \left(\frac{3-5}{2}, \frac{-1+7}{2} \right) = (-1, 3)$$

i) Given that one endpoint of a segment is (-7, -4) and knowing that the midpoint of the segment is (-1, 4), find the other endpoint.

$$\frac{x+(-7)}{2} = -1 \quad x-7 = -2 \quad \frac{y-4}{2} = 4 \quad y-4 = 8$$

$$\therefore \underline{\underline{x=5}} \quad \underline{\underline{y=12}}$$

$E(5, 12)$

Part D: Slope Intercept Form:

2. Use the slope-intercept method to graph the following lines.

C. $y = x - 2$

$m = \underline{1}$ $b = \underline{-2}$

D. $y = -\frac{3}{2}x + 1$

$m = \underline{-\frac{3}{2}}$ $b = \underline{1}$

