

# MATH A UNIT 2 REVIEW

## INSTRUCTIONS:

Show all of your work on separate paper, do not write answers on this review sheet. Number each problem in order on your paper and box your answers. Follow directions for each problem.

### I. Do the following problems. (See section 3.1)

1) Which of the following are the solutions of the equation  $y = -\frac{2}{3}x - 1$  ?

- a)  $(3, -1)$                       b)  $\left(\frac{1}{2}, -\frac{4}{3}\right)$                       c)  $\left(-\frac{3}{4}, -\frac{1}{2}\right)$

2) Which of the following are the solutions of the equation  $y = \frac{4}{5}x - 3$  ?

- a)  $\left(\frac{1}{4}, -\frac{2}{5}\right)$                       b)  $\left(\frac{3}{5}, -\frac{63}{25}\right)$                       c)  $\left(\frac{15}{4}, 0\right)$

### II. Complete the tables below. Plot the resulting data and connect the points. (See section 3.1)

3)

$x:$	-3	-2	-1	0	1
$y = 2x + 1$					

4)

$x:$	-3	-2	-1	0	1
$y = -\frac{1}{2}x + 2$					

### III. Graph each equation. Include a scale. (See section 3.2)

5)  $y = 3$

6)  $x = -3$

7)  $y + 1 = 0$

### IV. Graph the following equations using intercepts. Label the x-intercept and y-intercept. Include a scale. (See section 3.2)

8)  $3x + 2y = 12$

9)  $-4x + 7y = -28$

10)  $-2x - 5y = -10$

11)  $2x = 3y - 6$

### V. Determine the slope of the line that goes through each pair of points. If the slope is undefined, so state. (See section 3.3)

12)  $(-2, 1), (-2, 7)$

13)  $(-1, -5), (-3, -5)$

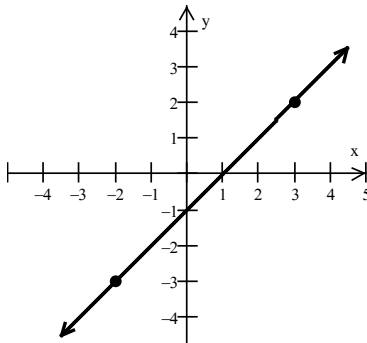
14)  $(-7, 1), (-5, 0)$

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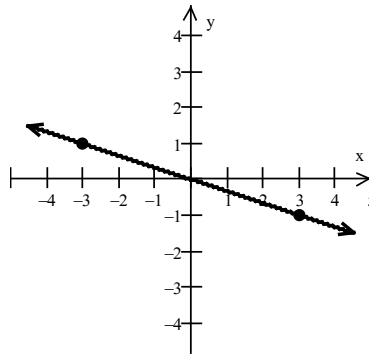
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**VI. For the following problems, find the slope of each line, or state that the slope is undefined. (See section 3.3)**

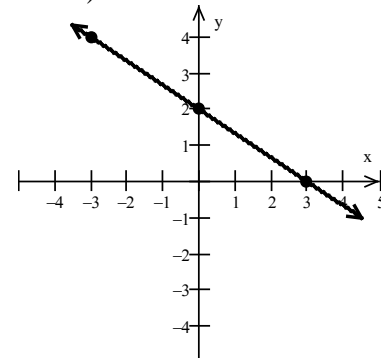
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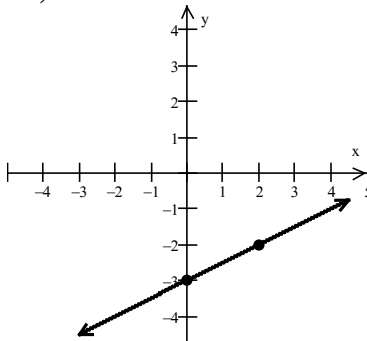
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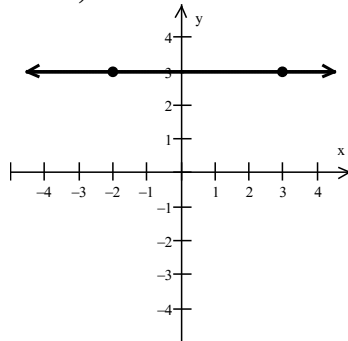
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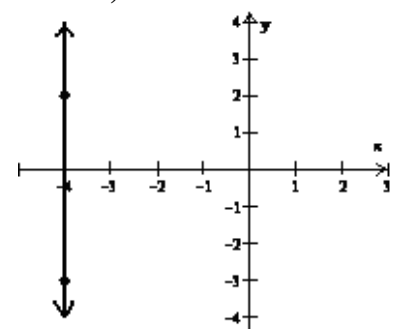
18)



19)



20)



**VII. Use the slope to determine if Line 1 and Line 2 through each pair of points are parallel to each other, perpendicular to each other, or neither. Do not graph. (See section 3.3)**

21) Line 1: (2, 4) and (6, 1)

Line 2: (-3, 1) and (1, -2)

22) Line 1: (-1, -6) and (2, 6)

Line 2: (-8, -1) and (4, 2)

23) Line 1: (3, 2) and (-2, -2)

Line 2: (3, -2) and (-1, 3)

**VIII. Find the slope and the coordinates of the y-intercept for each line. Then graph each line using the slope and y-intercept. Label at least two points on each graph. Include a scale. (See section 3.4)**

24)  $y = -\frac{1}{2}x - 1$

25)  $y = -2x - 5$

26)  $-x + 2y = 8$

27)  $-5x - 2y = -6$

28)  $y = -3x$

29)  $-3x + 2y = 6$

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**IX. Find the equation of the line with the following properties. Write your answer in slope-intercept form. (See section 3.5)**

30) Slope = 7, passing through  $(-4, 9)$

31) Slope =  $-4$ , passing through  $(-5, -2)$

32) Slope =  $-\frac{3}{5}$ , passing through  $(10, -4)$

33) Passing through  $(1, 2)$  and  $(5, 10)$

**X. Write an equation of a line going through the given points. Write in slope-intercept form. (See section 3.5)**

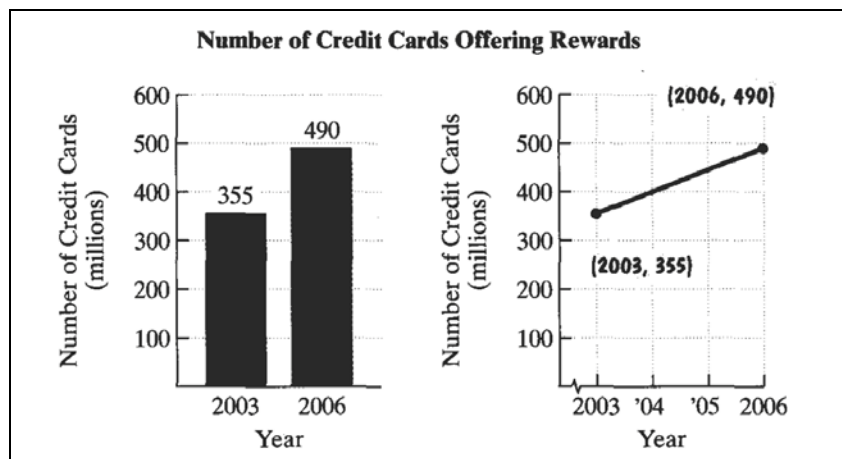
34)  $(-3, 0)$ ,  $(0, -6)$

35)  $(-4, 8)$ ,  $(4, 4)$

36)  $(-1, 2)$ ,  $(4, 2)$

**XI. Do the following word problems. (See section 3.3)**

37) With offers for everybody, including 5% cash back on bookstore purchases for college students, credit cards and their rewards can leave you dizzy. (Check out the interest rates and annual fees before you make your decision.) The graphs show the number of credit cards offering rewards in 2003 and 2006.

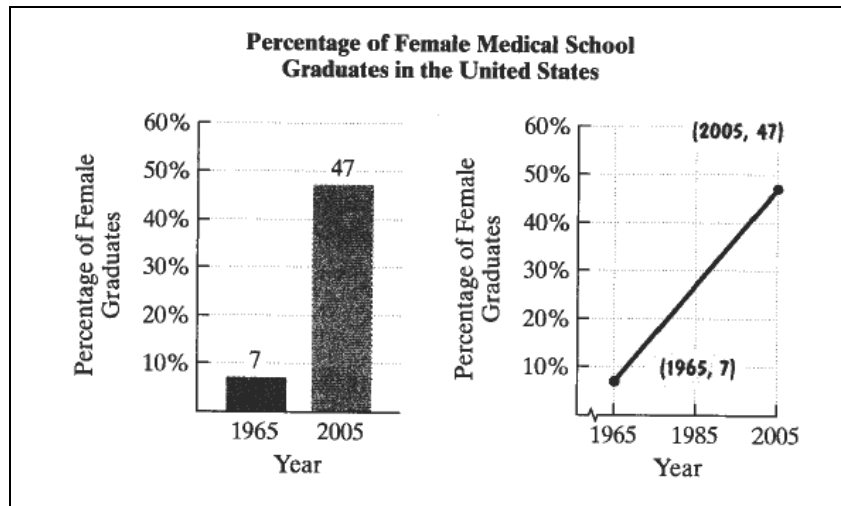


- a) Find the slope of the line passing through the two points shown on the graph on the right.
- b) Use your answer from above to complete the statement: For each year from 2003 to 2006, the number of credit cards offering rewards increased by \_\_\_\_\_ million. The rate of change was \_\_\_\_\_ rewards cards per \_\_\_\_\_ .

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38) The graphs below show the percentage of female medical school graduates in the United States in 1965 and 2005.



- a) Find the slope of the line passing through the two points shown in the graph on the right.
- b) Use your answer from above to complete this statement: For each year from 1965 to 2005, the percentage of female medical school graduates increased by \_\_\_\_ .  
The rate of change was \_\_\_\_ per \_\_\_\_ .

**XII. The formula  $y = 50x + 75$  models the cost to hire a plumber where  $y$  is in dollars and  $x$  is the number of hours the plumber works. (See sections 3.3, 3.4)**

- 39) Find the cost for the plumber to come and work 3 hours.
- 40) What is the slope of this equation? Describe the meaning of the slope in the model in terms of a rate of change.
- 41) What is the  $y$ -intercept in this equation? What does it represent in this situation?

**XIII. Graph each linear inequality. Include a scale. (See section 3.6)**

42)  $y \geq \frac{2}{3}x - 1$

43)  $y < -\frac{3}{4}x + 2$

44)  $2x + 3y > 6$

45)  $-3x - 2y > 4$

# MATH A UNIT 2 REVIEW *Answers*

1) b, c

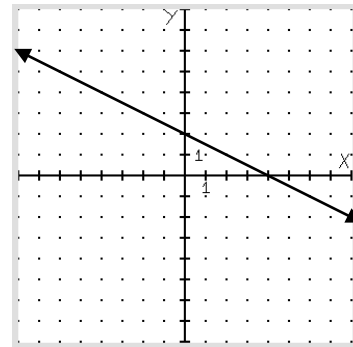
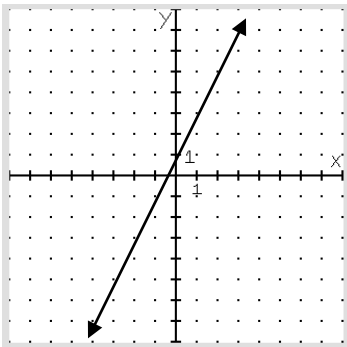
2) b, c

3)

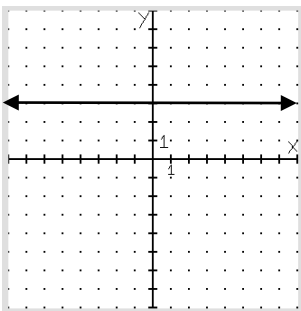
$x:$	-3	-2	-1	0	1
$y = 2x + 1$	-5	-3	-1	1	3

4)

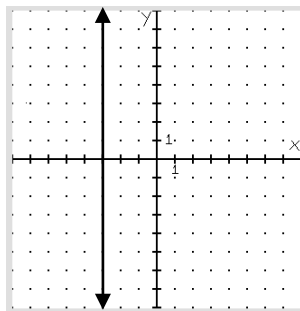
$x:$	-3	-2	-1	0	1
$y = -\frac{1}{2}x + 2$	$\frac{7}{2}$	3	$\frac{5}{2}$	2	$\frac{3}{2}$



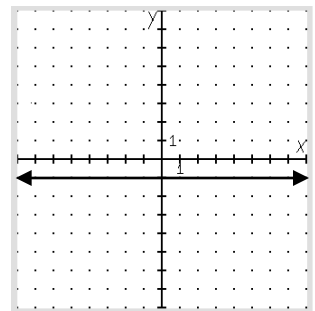
5)



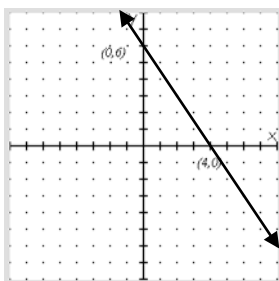
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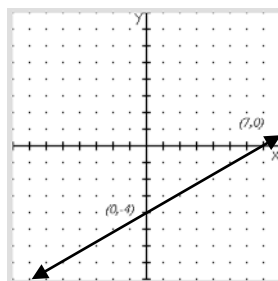
7)



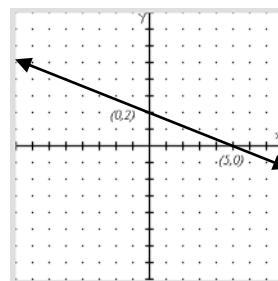
8) (4, 0), (0, 6)



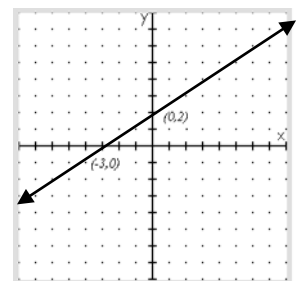
9) (7, 0), (0, -4)



10) (5, 0), (0, 2)



11) (-3, 0), (0, 2)



12) *undefined*

13)  $m = 0$

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

15)  $m = 1$

16)  $m = -\frac{1}{3}$

17)  $m = -\frac{2}{3}$

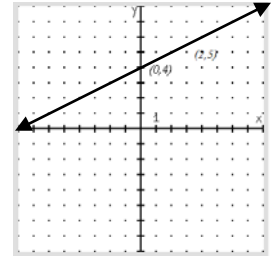
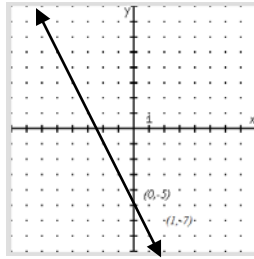
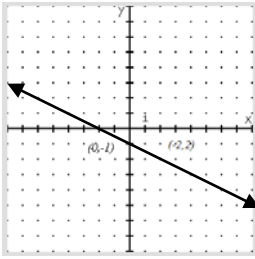
18)  $m = \frac{1}{2}$

19)  $m = 0$

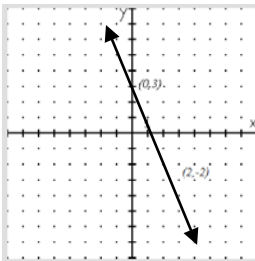
20) *undefined*

21)  $m = -\frac{3}{4}$ , parallel    22)  $m = 4$ ,  $m = \frac{1}{4}$ , neither    23)  $m = \frac{4}{5}$ ,  $m = -\frac{5}{4}$ , perpendicular

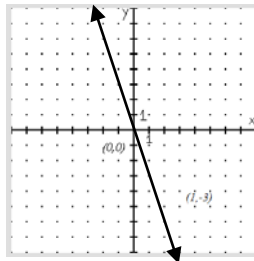
24) Slope:  $-\frac{1}{2}$ , y-int: (0, -1)    25) Slope: -2, y-int: (0, -5)    26) Slope:  $\frac{1}{2}$ , y-int: (0, 4)



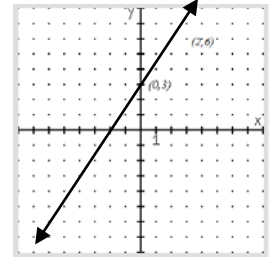
27) Slope:  $-\frac{5}{2}$ , y-int: (0, 3)



28) Slope: -3, y-int: (0, 0)



29) Slope:  $\frac{3}{2}$ , y-int: (0, 3)



30)  $y = 7x + 37$

31)  $y = -4x - 22$

32)  $y = -\frac{3}{5}x + 2$

33)  $y = 2x$

34)  $y = -2x - 6$

35)  $y = -\frac{1}{2}x + 6$

36)  $y = 2$

37) a) slope = 45

b) For each year from 2003 to 2006, the number of credit cards offering rewards increased by **45 million**. The rate of change was **45 million** rewards cards per **year**.

38) a) slope = 1

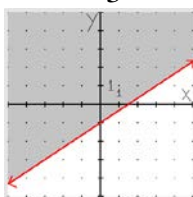
b) For each year from 1965 through 2005, the percentage of female medical school graduates increased by **1%**. The rate of change was **1%** per **year**.

39) \$225

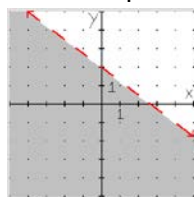
40) slope = 50. For each hour the plumber works, the cost increases by \$50. The rate of change is \$50 per hour.

41) y-intercept at (0, 75). The cost for the plumber to come and work for zero hours is \$75.

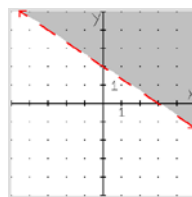
42)  $y \geq \frac{2}{3}x - 1$



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45)  $-3x - 2y > 4$

