

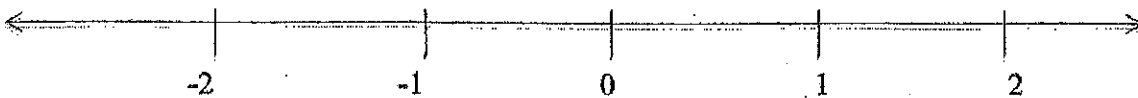
Are You Ready For MTH 65?

Below are some of the skills you should have BEFORE entering MTH 65.
Do not use a calculator.

1. $-4(5-7)^2 - 4 \div 2 =$

2. Place the following numbers on their approximate location on the number line:

$$\frac{3}{4}, 0.6, |-7|, \sqrt{4}$$



3. Simplify: $7a + 2b - 3(2a + 5) + 8a$

4. Solve the following formula for the variable L : $A = LW$

5. Evaluate $b^2 - 2ab$ when $a = -2$ and $b = -1$

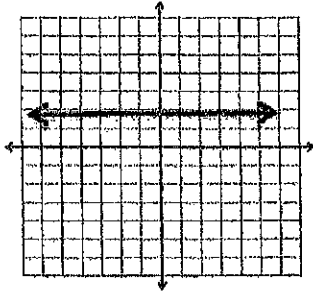
6. Solve: $-15 = -2 - (3x - 2) + 3$

7. Solve: $\frac{1}{3}x - \frac{1}{9} = \frac{1}{6}x + \frac{1}{2}$

8. Solve, graph on a number line, and express the solution set in interval notation for the following:

$$8x - 4 \geq 9x - 6$$

9. Write an equation for the following graph:

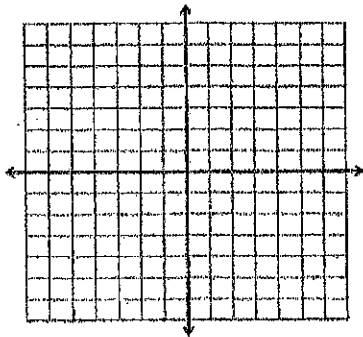


10. Graph the following equation and inequality below.

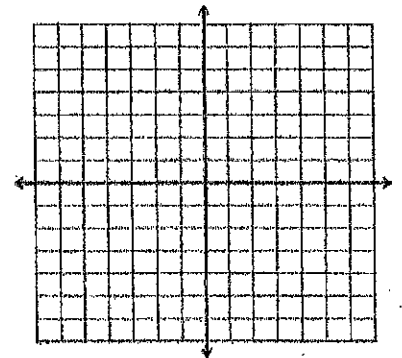
$$2x - 3y = -6$$

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

x	y



x	y



11. Given two points on a line, find the slope and indicate whether the line rises, falls, is horizontal, or is vertical. $(-3, 5)$ and $(-4, 2)$

12. Write the equation of the line in $y = mx + b$ form with slope 2 that passes through the point $(-1, -5)$.

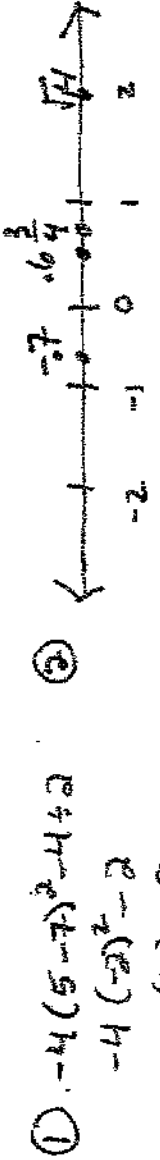
13. Solve a system of equations by all of the following methods: a) substitution, b) elimination/addition, and c) graphically.

Given:
$$\begin{cases} 2x + y = -3 \\ 3x + 4y = -2 \end{cases}$$

14. Candidate A received 2050 votes in the last election and won with 52% of the total number of votes cast in order to win. How many votes were cast in the last election? Round your answer to the nearest whole number.
15. Each month the Veritone cellular phone company charges a flat rate of \$21 plus \$0.02 per minute for calls and texting.
- a) Write a linear equation to model the situation using x for minutes and y for total cost per month.
 - b) Use your equation to find the cost for using 4 hours of calls/texting.
 - c) Use your equation to find the number of minutes you can use for a \$100 phone bill.
 - d) If you want to spend \$50 or less for the month, how many minutes can you use? Write and use an inequality to find the answer.

SOLUTIONS

RU READY
4 MTH 65?



$L = \frac{A}{W}$

④ $A = \frac{LW}{W}$

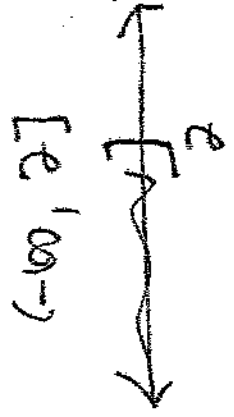
③ $7a + 2b - 3(2a + 5) + 8a$
 $7a + 2b - 6a - 15 + 8a$
 $9a + 2b - 15$

⑤ $b^2 - 2ab$
 $(-1)^2 - 2(-2)(-1)$
 $1 - 2(-2)(-1)$
 $1 - 4$
 -3

⑥ $-15 = -2 - (2x - 2) + 3$
 $-15 = -2 - 2x + 2 + 3$
 $-15 = 3 - 2x$
 $-18 = -2x$
 $\frac{-18}{-2} = \frac{-2x}{-2}$
 $x = 9$

⑦ $\left[\frac{1}{3}x - \frac{1}{9} = \frac{1}{6}x + \frac{1}{2} \right] 18$
 $6x - 2 = 3x + 9$
 $3x - 2 = 9$
 $3x = 11$
 $x = 11/3$

⑧ $8x - 4 \geq 9x - 6$
 $-x - 4 \geq -6$
 $-x \geq -2$
 $x \leq 2$



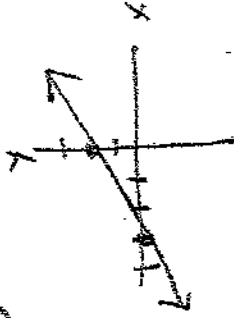
Solutions

9) horizontal line

$$y = 2$$

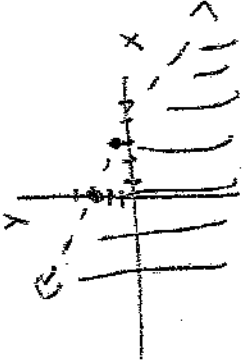
10) $2x - 3y = -6$

x	y
0	2
-3	0



$$y < \frac{2}{3}x + 3$$

x	y
0	3
3	1



Test (0,0)

$0 < 0 + 3$
 $0 < 3$
 yes!

Shade below!

11) $(-3, 5)$ $(-4, 2)$

$$\frac{5 - 2}{-3 - (-4)} = \frac{3}{-3 + 4} = \frac{3}{1} = 3$$

Rises!

12) $y = mx + b$

$$-5 = 2(-1) + b$$

$$-5 = -2 + b$$

$$-3 = b$$

$$y = 2x - 3$$

13) $2x + y = -3$

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

a) $2x + y = -3$
 $-2x$

$$y = -3 - 2x$$

$$3x + 4(-3 - 2x) = -2$$

$$3x + 12 - 8x = -2$$

$$12 - 5x = -2$$

$$-5x = \frac{-14}{-5}$$

$$x = 2$$

$$y = -3 - 2x$$

$$-3 - 2(2)$$

$$-3 - 4$$

$$y = -7$$

b) $2x + y = -3$ -4

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

$$-8x - 4y = 12$$

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

$$-5x = 10$$

$$x = -2$$

$$2(-2) + y = -3$$

$$-4 + y = -3$$

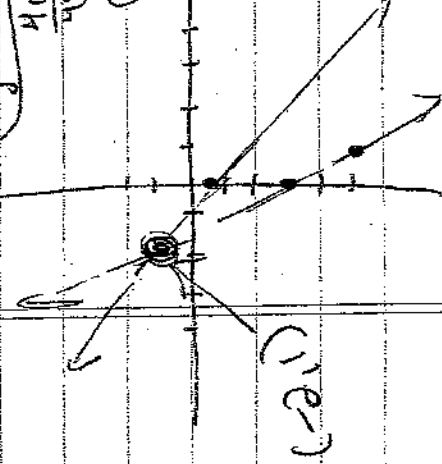
$$y = 1$$

$$y = -3 - 2x$$

$$\frac{4y = -2 - 3x}{4}$$

$$y = -\frac{1}{2} - \frac{3}{4}x$$

d)



14] Won 52% 2050 is 52% of what number?

$$\frac{2050}{.52} = \frac{.52X}{.52}$$

$$X = 3942.3$$

TOTAL 3942 votes

15]

$$C = \text{cost} = y$$

$$M = \text{minute} = x$$

a) $y = 21 + .02x$

$$4 \text{ hours} = 240 \text{ min}$$

b) $y = 21 + .02(240)$

It would cost \$25.80 for 4 hours.

$$y = 21 + 4.80$$

$$y = 25.80$$

c) $100 = 21 + .02x$

$$\frac{79}{.02} = \frac{.02x}{.02}$$

$x = 3950$ minutes for a \$100 phone bill.

d) $21 + .02x \leq 50$

$$.02x \leq 29$$

$$\frac{.02x}{.02} \leq \frac{29}{.02}$$

$$x \leq 1450$$

1450 minutes or less to spend \$50 or less