C1 Unit 3 Review Problems Name_____

1. A line contains the points (3, -2) and (-6, 1)

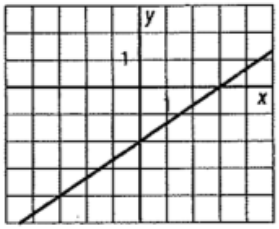
   a. Write the equation for the line.

   b. Write an equation of the line which contains the point (6, 1) and is parallel to the line in part a.

2. Determine the slope and y-intercept of each line.

   a. The line with equation $2x + 4y = 6$

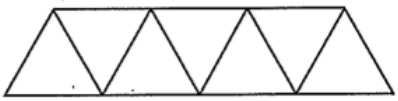
   b. The line with the graph show.



   c. The line with the table below.

x	y
−3	3
−1	2.3333
1	1.6667
3	1

3. The following diagram shows how a rigid roof brace can be constructed by connecting short bars in a triangulated pattern.



   a. Make a table showing the number of bars needed to make such a brace so that the bottom side has length 1, 2, 3, 4, or 5 bars.

   b. Write an expression showing how the number of bars required for a brace depends on the length of the bottom side.

   c. Write a Now-Next equation for this situation.

4. Solve the following system of equations.

$$y = 4 - 7x$$
$$y = 13 + 5x$$

5. Solve the following.

   a. $3x - 12 = 24$

   b. $-12 + 11m < 54$

   c. $3(4x - 7) = 8x + 14$

   d. $7x - 19 > 3x + 13$

6. Simplify and then factor.

   a. $6x + 5 + 9x$

   b. $13x + 6 - (2 - 3x)$

7. Simplify.

   a. $3x + 5 - (30 - 3x)$

   b. $-7x + 13 + \frac{3(2x - 4)}{2}$

Answers:

1. a. $y = -\frac{1}{3}x - 1$ b. $y = -\frac{1}{3}x + 3$

2.

	Slope	y-int
a.	-0.5	1.5
b.	2/3	-2
c.	-1/3	2

3. a.

Bottom Side Length	1	2	3	4	5
Number of Bars	3	7	11	15	19

b.B= 4n – 1

4. $\left(-\frac{3}{4}, \frac{37}{4}\right)$

5. a. x = 12 b. m < 6 c. x = 8.75 d. x > 8

6. a. 15x + 5 = 5(3x + 1) b. 16x + 4 = 4(4x + 1)

7. a. 6x – 25 b. -4x + 7