Name _____ Date _____

Algebra 2

1.4-1.6 Quiz Review

1. Which of the following is true? (*multiple choice, select the best asnwer*)

[A] The tenth term of the sequence $4,7,10,13...$ is 30

$$a_1 = 11$$

[B] $a_n = 11 + 6n; n \geq 1$ and $a_n = a_{n-1} + 6$ both define the same sequence

$$n \geq 2$$

[C] The sum of the first 12 terms of the arithmetic series with $a_1 = -5$ and $a_{12} = \frac{23}{2}$ is 39

[D] $\sum_{n=1}^{20}(3n-15) = 450$

2. Write the explicit definition for the sequence given by $b_n = b_{n-1} - 4$.

$$b_1 = 10$$
$$n \geq 2$$

3. Write the recursive definition for the sequence given by $a_n = 2 - 3(n-1); n \geq 1$.

4. On Gabi's first birthday, her parents gave her a $50 savings account. On every birthday after that her parents added to the account, increasing the amount they deposited by $25 each year. The amount of money being added to her account can be written as an arithmetic sequence.

a. Write the first 5 terms of the sequence.

b. Write an explicit definition for the sequence.

c. How much money was put into Gabi's account on her 18th birthday?

d. Express the total amount Gabi's parents will have deposited into her account on her 18th birthday using sigma notation.

e. Calculate the total amount Gabi's parents will have deposited into her account on her 18th birthday.

5. Use your grapher to solve the equation: $-2|x-1|+3=\frac{2}{5}x-\frac{11}{5}$

6. Use your grapher to solve the inequality: $2x^2-6\geq 3-x$

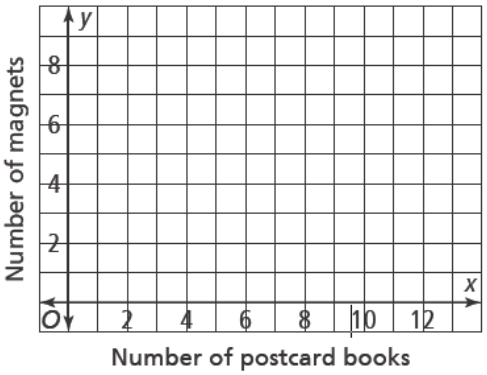
For problems 7-8, solve the system of equations using an algebraic method, and check your answer by graphing.

7. $\begin{cases}4x+y=-1\\-5x-2y=-4\end{cases}$

8. $\begin{cases}3x+y=-9\\x+5y=16\end{cases}$

9. Sheri is on vacation and wants to buy souvenirs (either a postcard book or a magnet) for at least 8 friends. A postcard book costs $2.50 and a magnet costs $4. She has $30 to spend altogether on the souvenirs.

a. Write a system of inequalities to represent the situation.



b. Graph your system of inequalities.

c. Give a possible solution for the system.

10. A gallery promotes young artists by buying and selling their paintings. They also buy and sell lithographic prints of popular works. The purchase price of a painting is $300 and the purchase price of a lithographic print is $150. For any single purchase, the gallery will spend up to $6000 total on paintings and prints. The gallery has a policy of purchasing at least 6 paintings and never more than 25 paintings and prints in all (at a single purchase). The profit on a painting is $200 and the profit on a lithographic print is $150. How many paintings and lithographic prints should the gallery purchase to maximize their profit?