Math 99
Exam 1
April 25th, 2007

Name: _____

1. Your exam contains 6 questions and 6 pages; Please make sure you have a complete exam.
2. The entire exam is worth 100 points. Point values for problems vary and these are clearly indicated. You have 50 minutes for this exam.
3. Make sure to ALWAYS SHOW YOUR WORK; you will not receive any partial credit unless all work is clearly shown. If in doubt, ask for clarification.
4. If you need extra space, use an extra sheet attached to the back of the exam and clearly indicate this.
5. You are allowed one 8.5×11 sheet of handwritten notes (both sides).
6. Leave answers in exact form (as simplified as possible) or round to 4 decimal places.

Problem	Total Points	Score
1	20	
2	5	
3	20	
4	24	
5	20	
6	11	
Total	100	

1. (20 pts.) Rocky sells 2 types of pet rocks. He sells basic pet rocks for \$5.10 each and premium pet rocks with glitter for \$12.25 each. On a particular day, his sales were \$335.75 and he sold 8 more basic pet rocks than premium pet rocks. Find how many of each type he sold on that day by writing a linear system that models the situation.

2. (5 pts.) Is $(0, 1, 2)$ a solution to the system $\begin{aligned} 3x + y - z &= -1 \\ -x - 2y + 2z &= 2 \\ 4x + 5y - z &= 3 \end{aligned}$?

3. (20 pts.) Solve the following absolute value equations and inequalities. Write your solutions in interval notation (as simplified as possible).

(a) (6 pts.) $|\frac{1}{2}x - 3| - 4 = 1$

(b) (7 pts.) $|r + 1| \geq 3$

(c) (7 pts.) $|6 - 4t| < 10$

4. (24 pts.) Solve the following systems of equations by substitution or elimination.

(a) (12 pts.) $\begin{aligned} \frac{3}{4}x + 3y &= \frac{5}{2} \\ -4x + 9y &= -5 \end{aligned}$

(b) (12 pts.) $\begin{aligned} 2x + 6y &= 10 \\ 4x &= -12y + 20 \end{aligned}$

5. (20 pts.) Solve the following compound inequalities. Write your solutions in interval notation (as simplified as possible).

   (a) (10 pts.) $-2x \geq -8$ or $x + 2 < 10$

   (b) (10 pts.) $3m + 1 \geq -11$ and $m - 3 \leq -1$

6. (11 pts.) Solve the system $\begin{array}{l} 2x - 2y = 10 \\ \frac{1}{2}y = -x + 2 \end{array}$ by graphing. (Be sure to check your solutions!)