Name: _____ **Take-Home Quiz 3**

Math 111 Intro to Math Methods and Applications – Crawford **Due: Friday 13 November 2013 by 2pm**

This is a take-home quiz. You ***are*** allowed to work with each other and get help from the tutors, but you may not get help from me. You must *show all your work* for full credit. Good Luck! [Scores will be scaled to 20 points.]

1. (14 pts) Solve the following systems. Show all of your work and leave your answers in exact form.

(a). $\begin{cases} 3x + 3y = 7 \\ 6x + 10y = 6 \end{cases}$ [Use elimination.]

(b). $\begin{cases} -x + \frac{2}{3}y = 5 \\ 9x - 6y = 6 \end{cases}$ [Use elimination or substitution.]

2. (8 pts) You have a total of \$10,000 to invest. One fund is moderate risk and earns 7.5% simple annual interest. The other fund is high risk and earns 10% simple annual interest. If you want a total of \$850 in interest per year, find the amount you should invest in each fund. [Clearly state what each variable represents. Write your final answer using the words of the problem.]

3. (8 pts) Solve the following equations for x. Give real solutions exactly and simplified, if they exist.

(a). $x(x-5) = 14$

(b). $x^2 + 2x - 4 = 0$