

Name: \_\_\_\_\_

Math 111 Intro to Math Methods and Applications – Crawford

Take-Home Quiz 3

Due: 06 October 2013 by 5pm

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. (8 pts) You are selling football tickets. Student tickets cost \$5 and general admission tickets cost \$8. You sell 858 tickets and collect \$5826. Determine how many of each type of ticket was sold. [Clearly state what each variable represents. Write your final answer using the words of the problem.]

2. (8 pts) A glass of skim milk supplies 0.1 mg of iron and 8.5 g of protein. A serving of tofu supplies 1.8 mg of iron and 11 g of protein. If a person has a diet that requires 1.95 mg of iron and 23.75 g of protein, how many glasses of milk and how many servings of tofu would provide this. [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, if they exist.

(a).  $x(x + 9) = x - 15$

(b).  $5x^2 + 3x + 1 = 0$

4. (8 pts) Given the quadratic  $y = x^2 + 4x - 32$ ,

(a). Find the  $(x, y)$  coordinate of the vertex; Is it a maximum or minimum?

(b). Find the  $x$ - and  $y$ -intercepts, if they exist.

(c). Graph the function (w/o a calculator). Clearly label the vertex and intercepts. [Draw nicely – label marks on the axes.]