Name: ——————————————————— **Quiz 1**

Math 162 Analysis for the Business and Social Sciences – Crawford **14 September 2016**

Books and notes (in any form) are not allowed. You may use a calculator. *Show all work for full credit.* Good Luck!

CALCULATOR NUMBER: ——————

1. (5 pts) Solve the following system. Show all of your work and leave your answers in exact form.

$$\begin{cases} 5x & - & 2y & = & -4 \\ 2x & - & 3y & = & 5 \end{cases}$$

2. (5 pts) Find the equilibrium point for the following supply and demand functions.

Demand: $p = -\dfrac{1}{2}q + 200$

Supply: $p = 3q + 4$

3. (5 pts) A small company manufactures and sells wooden chairs. The revenue function is given by $R(x) = 89x$ and the cost function is given by $C(x) = 1750 + 75x$. Find the number of chairs that must be sold to break even.

4. (5 pts) Solve the following equations for x. Give real solutions <u>exactly and simplified</u>, if they exist.

$x^2 + 17x = 8x - 14$