QUIZ 4 - MATH 111

YOUR NAME:_____

Read each problem **very carefully** before starting to solve it. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [3 points] Find an equation for the line ℓ that passes through the point $(1, -3)$ and is perpendicular to the line ℓ' passing through the points $(-2, 7)$ and $(10, 1)$. Please, show all your steps.

2. [3 points] A clothing business can sell 500 shirts at \$10 each, while 1000 shirts can be sold at the bargain price of \$6 each. Find a linear model for the price $p(n)$ per shirt in terms of the number n of shirts purchased.

3. [4 points] In the Midwestern town of Boozeman, two pubs are competing for bartending staff.

- The "Holy Spirit", pays $12/hour and each of its customers leaves an average tip of 80 cents per drink served.

- The "Prodigal Son", pays $8/hour, but each of its customers leaves an average tip of $1 per each drink served.

Suppose that a bartending shift is 6 hours long and that your sister, Emily, is trying to decide which pub to work for to earn some extra cash for college. Could you help her figure out how many drinks she would have to serve during her 6-hour shift to make the "Prodigal Son" a more attractive option?