QUIZ 7 - MATH 111

Friday, October 19
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YOUR NAME:_____

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

1. The following table summarizes the total sales S in the U.S. of some commodity in millions of units in the years between 2001 and 2010:

Year	2001	2003	2004	2007	2010
Sales	6.32	5.53	5.35	4.65	3.71

   (a) Perform the check for linearity to test whether S (sales in millions of units) vs. t (year since 2001) is linear. Show all details.

   (b) Get an equation for the regression line and explain in practical terms the meaning of the slope.

   (c) Overlay the plot of the data points with the equation of the line and comment whether it looks reasonable to approximate S vs. t by a linear model. Explain.

   (d) If the trend that you discovered using the linear model continued after 2010, during which year did sales fell (or will fall) below the 2.5 million unit mark? Please, find this solution by hand, showing all your steps.

2. Use the method of elimination with equations (not matrices) to solve the system of linear equations

$$\begin{cases} 3x & - & 5y & = & -11 \\ 4x & + & 10y & = & 57 \end{cases}$$