Math 131 homework: Models and problems

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1 Homework

Notes also available as PDF.

Practice is absolutely critical in this class.

Groups are fine, turn in your own work. Homework is due in or before class on Mondays.

- Exercises for 7.3
  - 25, 26, 68, 70
- Exercises for 7.4
  - 64, 65, 66 (note: making a profit implies $R - C > 0$ where R is the revenue and C is the cost)
- Exercises in 7.5
  - 60, two different ways. First, substitute points into $x^2 + (x + 30)^2 - 150^2$ and plot the line segments. Try $x \in \{80, 85, 90, 95, 100\}$. In this case, you'll happen to find the answer. For the other way, use the Pythagorean theorm as in the text.
- Exercises in 8.1
  - 56: Use the point formula for a line,
    $$\frac{x - x_0}{x_1 - x_0} = \frac{y - y_0}{y_1 - y_0},$$
    to determine the equation of the closest points to each requested x. Then substitute the x value in the middle and find the y.
- Exercises in 8.3:
  - 70, 72, 74
- Exercises in 8.6:
  - 50
- Exercises in 8.7:
  - Use either substitution or elimination: 50, 78 (yes, I had to assign a "speed of a train leaving..." problem), 86
- Exercises in 8.8:
  - 30, 34

Note that you *may* email homework. However, I don't use Microsoft$^{\text{TM}}$ products (*e.g.* Word), and software packages are notoriously finicky about translating mathematics.

If you're typing it (which I advise just for practice in whatever tools you use), you likely want to turn in a printout. If you do want to email your submission, please produce a PDF or PostScript document.