Models

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1 Administrivia

Announcements

Assignment

Read Sections 1.3 and 1.4.

From Last Time

Puzzle: what did we learn?

2 Introduction

1. What is a mathematical model?

2. Some mathematical models:

   (a) Crossing the quad when you’re in a hurry.

       No brainer.

   (b) Crossing the street when you’re in a hurry.

       Intuition — sometimes wrong.
(c) Considering adding capacity to a manufacturing plant.

Can’t rely on intuition.

(d) Why would I want to do this? Determining the “best” ticket price.

Want to maximize profit. Graph price (rising line). Graph sales (falling line).
How do we determine profit? Any costs?

3 Class Assignment

1. What are we trying to predict with the data in Figure 4? (Refer to Section 1.2.)

2. Why can’t we use the data in Figure 2 to make the prediction?


5. From the data in Figure 4, describe the steps used in getting to the expected revenue model (the equation at the bottom of page 7).

6. Using a calculator, create a scatter plot of price vs. revenue using the data in Figure 4. Superimpose the expected revenue on top of your scatter plot. Describe how good the fit of the model equation is.