Laboratory Activity 1 for Math 080: Topics from Chapter 1

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1 Introduction

Steven Levitt is one of the authors of the book Freakonomics. In this TED talk, he explains a statistical analysis done on data from the National Highway Transportation Safety Administration. Pay close attention to the specific data sets used in his presentation.

Answer the following questions and submit as a PDF file to jhanson2@whittier.edu.

2 Questions

1. Identify the proportional data listed for car-seats and different types of seat belt.

   Among 2-6 year olds: 29.3% death rate when unrestrained, 18.2% death rate in a car seat, 19.4% death rate wearing lap and shoulder belt, 16.7% death rate wearing lap-only belt

2. Around minute 12:00, the speaker shows a graph of raw data of the “reduction of fatalities due to car seats, lap- and-shoulder seat belts, and lap-only seat-belts.” Explain how these numbers are 0.1, 0.11, and 0.12, approximately. Where do these numbers come from on the previous slide?

   These numbers show the reduction of fatalities of each type of restraint, but relative to the unrestrained statistic. It is essentially the same information as the chart, but just showing it as a graph in relation where the higher the number, the better, showing a higher reduction in fatalities in relation to unrestrained.

3. At the end of the talk, the speaker is asked a question about injuries rather than fatalities. How does he argue that seat belts are just as effective as car seats for children above the age of 2? What statistic does he quote for the New Jersey data sample?

   His own data shows small differences in injury between use of car seats or shoulder/lap belts, NJ data shows 10% difference in injuries, but minor injuries.