Taylor Watanabe
Whittier I.D : 20594796

Laboratory Activity 1 for Math 080: Topics from Chapter 1

Jordan C. Hanson

July 4, 2020

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.

   29.3% of unrestrained die
   18.2% in car seat die
   19.4% in a lap-shoulder belt die
   16.7% in lap-only seatbelt die

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 are the reduction values in fatalities relative to the unrestrained.
   29.3% = 0.29 unrestrained vs. 0.18 car seat which would give ~0.11 & so on.

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?

   Found insignificant differences in injury looking @ the New Jersey data where looking @ all crashes. there's only a 10% difference in injuries but mostly minor of car seat vs. lap-shoulder belts.
   Questioning if there's enough serious injuries to make car seats cost-effective.