

Homework 2

Math 243

Due June 29th at 11:59 PM

Textbook Exercises

Chapter 3: 28, 29, 30, 32, 35, 36, 37

Chapter 8: 26, 27, 29, 31, 33

Exercise 1: Test scores, height, and weight are often given in **percentiles**: the percent of the population with a lower score. The upper arm lengths of women in the US are approximately $N(35.8, 2.1)$, and those of men are approximately $N(39.1, 2.3)$, where the units are in centimeters.

- a) Cecile is a 73-year-old woman in the US with an upper arm length of 33.9. What percentile is she in?
- b) Measure your own upper arm length and find the percentile you're in. The length is measured from the bony part of the shoulder down the outside edge of the arm to the bony part of the elbow.

Exercise 2: A common form of nonresponse in telephone surveys is “ring-no-answer.” That is, a call is made to an active number but no one answers. The Italian National Statistical Institute looked at nonresponse to a government survey of households in Italy during the periods January 1 to Easter and July 1 to August 31. All calls were made between 7 and 10 p.m., but 21.4% gave ring-no-answer in one period versus 41.5% ring-no-answer in the other period. Which period do you think had the higher rate of no answers? Why? Explain why a high rate of nonresponse makes sample results less reliable.