

Group Work - Week 3

1 The file “`heights.csv`” on D2L has heights in inches of a sample of 25 men and 25 women.

(a) Create 5 number summaries and boxplots for both men and women.

(b) Consider a man who is 68.5 inches tall and a woman who is 63.25 inches tall. What are the z-scores for height for both of these individuals? Who is taller relative to their gender?

(c) What percentile is 65 inches for a man? What height is the 80th percentile for women?

2 Suppose you encounter the following game at a school carnival: A wheel with colored spokes is spun and the wheel comes to rest with a pointer pointing at one of the spokes. If you land on a gold spoke, you get 10 tickets. You get 4 tickets for landing on blue and 2 tickets for landing on red. If you land on black, you get nothing. There are 9 black spokes, 6 red spokes, 4 blue and 1 gold spoke. The game cost three tickets to play.

(a) Create a probability distribution which describes this game.

(b) How many tickets should you expect to win? That is, what is the expected value of the game? What is the standard deviation of tickets won?

(c) Is this a fair game? If your goal was to increase you tickets, what is the maximum number of tickets you should pay for the game?