

Math 180 Homework #3
Due Wednesday, September 25

1. A basketball player is well-established as making 80% of her free throws. At practice, the coach puts her to the test and has her attempt 100 free throws.
 - (a) What is the mean number of free throws she makes at practice?
 - (b) What is the standard deviation of the number of free throws she makes at practice?
 - (c) Assuming the distribution of free throws is normal, how often does the player make at least 92 of the free throws?

2. The heights of men in the U.S. are normally distributed with a mean of 5 feet, 10 inches and a standard deviation of 3 inches.
 - (a) What percent of U.S. men are within one standard deviation of the mean?
 - (b) What percent of U.S. men are 6 feet, 1 inch or taller?
 - (c) What percent of U.S. men are 5 feet, 1 inch or shorter?
 - (d) What percent of U.S. men are between 5 feet, 4.5 inches and 5 feet, 9 inches?
 - (e) What percent of U.S. men are under 5 feet, 8 inches?

3. Suppose an airline is taking reservations for a flight with 200 available seats. Assume that the probability that an individual with a reservation makes it to their flight is 0.95, and that these events are independent for all passengers.
 - (a) How many reservations should the airline sell so that the expected number of passengers is 200?
 - (b) Assuming the number of passengers who show up is normally distributed, about what percent of the time will there be more than 3 passengers without available seats? (Hint: you'll need to compute the standard deviation, and your answer to the question will be an approximation.)