

Practice QUIZ Problems

#1. Last year you bought a ticket to fly home for Thanksgiving on Statistics Airlines (motto: "We get you there with a 95% chance"). It sold 170 tickets for a flight that could seat only 150 people. Assume any given passenger who bought a ticket will show up with probability $p=0.9$.

- a) Assuming that all passengers travel independently of each other, what is the chance that some of them had to be turned down?
- b) Does your answer change if instead of traveling independently all passengers travel in pairs (here assume that the probability of a pair of passengers showing up for the flight is 0.9)?
- c) This year you are flying home for Thanksgiving on Statistics Airline again and you want to see if your estimate of $p=0.9$ was correct. If 157 travelers show up for the flight this year, what will be p-value of your test?
- d) Find power of your test if in fact $p=0.85$

#2. Tanya has invited her friends over for dinner next Friday night. Her cook will have a day off on Friday (what a bummer!), so Tanya has to choose the menu and cook the meal by herself. She wants to prepare 3 appetizers, 2 meat dishes and a salad. She knows recipes for 6 appetizers, 5 meat dishes and 3 salads

- a) What is the probability of each possible combination of dishes?
- b) In how many ways can Tanya choose the menu for dinner?

#3. An elevator in the athletic dorm at Football College has a maximum capacity of 2400lb. Ten football players get on at the 20th floor. Assuming their weights are normally distributed with $\mu=220$ and $\sigma=20$, what is the chance that there will be 10 fewer football players at tomorrow's practice?

#4. Suppose Tevye tells you that the scores on the last homework were approximately normally distributed with a mean of 78 points. Also he tells you that only 10% of the scores were below 69 points. The top 15% of all scores have been designated as A's. Your score is 89. Did you receive an A? (These are not real scores, so don't worry!)