

Section 1 (See Example 1 & GW1)

1. Suppose that 20% of the subscribers of a cable television company watch the shopping channel at least once a week. The cable company is trying to decide whether to replace this channel with a new local station. A survey of 100 subscribers will be undertaken. The cable company has decided to keep the shopping channel if the sample result is greater than 25%. What is the approximate probability that the cable company will keep the shopping channel?

a) What is the mean and standard deviation?

b) Find your z-score and the probability:

2. It is estimated that 48% of all motorists use their seat belts. If a Tulsa police officer observes 400 cars go by in one morning, what is the probability that the proportion of drivers wearing seat belts is between 45% and 55%?

a) What is the mean and standard deviation?

b) Find your z-score and the probability:

3. Suppose that 35% of all nurses in America are willing to switch hospitals if offered a higher salary. If a recruiter randomly contacts 100 nurses, what is the probability that over 40% of the sample would be willing to switch hospitals if offered a higher salary?

a) What is the mean and standard deviation?

b) Find your z-score and the probability:

Section 2 (See Example 2 on handout & GW2)

4. In 1990, 5.8% of job applicants who were tested for drugs failed the test. At the 0.01 significance level, test the claim that the failure rate is now lower if a SRS of 1520 current job applicants results in 58 failed drug tests. Does the result suggest that fewer job applicants now use drugs?

5. According to a survey conducted by the Association of Dressings and Sauces (yes, this is a real association), 85% of American adults eat salad at least once a week. A nutritionist suspects that the percentage is higher than this. She conducts a survey of 200 American adults and finds that 171 of them eat salad at least once a week. Is there evidence to support the nutritionist's claim?