Hypothesis Testing

In an advertisement, a pizza shop claims that its mean delivery time is less than 30 minutes. A random selection of 36 delivery times yields a sample mean of 28.5 minutes and a standard deviation of 3.5 minutes. Does this provide sufficient evidence to support the claim at a significance level of c = .01?

One of your franchisees reports an average of 150 sales per day for her franchise. You suspect that this average is inaccurate, so you randomly select 43 days and determine the number of sales for each day, which turns out to be 143 with a standard deviation of 15 sales. At c = .05; is there enough evidence to support her claim? At the level c = .01?

Suppose you work for Ifonas Drug Corporation and are testing their expensive new drug which has been approved to cure triskaidekaphobia. The pill form of the drug is to be manufactured at 325 mg in 500 mg pills, with the balance being cellulose (sawdust). Conduct a test at the c = .01 significance level, for the purpose of either recommending that the manufacturing plant adjust their manufacturing process or not. Assume that you have obtained 185 pills from the manufacturing plant, for which the mean concentration is 327.55 mg and s = 9.2 mg.

A medical researcher claims that less than 20% of adults in the US are allergic to Little Plastic Pigs. He finds that in a random sample of 125 adults, 15% report allergic reactions to LPP's. Do the data support his claim?

A research paper in the Journal of Pediatrics made the following assertion: “At least 5.6% of the time hospitalized children are medicated incorrectly by the attending nurse." The management of the hospital decides to conduct an HT of the assertion at the c = .02 level. They collect a sample of size n = 1600; and find that 73 are incorrectly medicated. What does the hospital conclude?

A casino has had one of its die confiscated for suspected biasing in favor of a low proportion of 6's. The Oregon Gaming Commission rolled the die 1000 times, and found 136 6's. If a hypothesis test at c = :05 determines that the die is biased, the Commission has the authority to shut the game down and \_ne the casino. Determine if this action is warranted.