For each of the following

a. Find the claim, the null hypothesis and the alternative hypothesis
b. State the sample information and explain whether you can use a z-test to test the claim
c. List the sample information
d. Find and interpret the test statistic
e. Determine whether the test is a one-tail right, one-tail left or two tailed test, explain your choice.
f. Find the critical value and draw the appropriate curve.
g. Compare your test statistic to the curve. State your conclusion for the critical value method.
h. Find the p-value using the table and using the calculator. Show the conclusion based on the p-value.
i. Give a sentence that interpret the conclusion.

Problems:

1. When testing gas pumps in Michigan for accuracy, fuel-quality enforcement specialists tested pumps and found that 1299 of them were not pumping accurately (within 3.3 ounces when 5 gallons are pumped), and 5686 pumps were accurate. Use a 0.01 significance level to test the claim of an industry representative that less than 20% of Michigan gas pumps are inaccurate. From the perspective of the consumer, does that rate appear to be low enough?

2. In an Accounttemps survey of 150 senior executives, 47.3% said that the most common job interview mistake is to have little or no knowledge of the company. Test the claim that in the population of all senior executives, 50% say that the most common job interview mistake is to have little or no knowledge of the company. What important lesson can be learned from this survey?

3. In recent years, the Town of Newport experience an arrest rate of 25% for robberies. The new sheriff compiles records showing that among 30 recent robberies, the arrest rate is 30%, so she claims that her arrest rate is greater than the 25% rate in the past. Is there sufficient information to support her claim that the arrest rate is now greater than 25%?

4. Adults were randomly selected for a Newsweek poll. They were asked if the “favor or oppose using federal tax dollars to fund medical research using stems cells obtained from human embryos.” Of those polled, 481 were in favor and 401 were opposed and 120 were unsure. Excluding the 120 who were unsure test the claim that of adults who had an opinion 50% were in favor. Use a 0.01 level of significance.