Math 140 Quiz 7 Name:_____

1. TRUE or FALSE?

T F The numerical value must be the same in both hypotheses.

T F The hypotheses are statements about the population parameter.

T F The point estimate, or sample statistic, is our evidence in hypothesis testing.

T F The p-value shows how surprised we are by the value of the test statistic, assuming that the null hypothesis is true.

T F If we can reject the null hypothesis, then we can say the sample results are statistically significant.

T F A p-value is NOT the probability that the null hypothesis is true.

T F We never say we accept the null hypothesis; we say we fail to reject it.

T F If a 95% confidence interval contains the claimed value, then it's a plausible value, so we cannot reject the null hypothesis at the 5% significance level.

2. The UCLA Internet Report (February 2003) estimated that roughly 0.75 of online homes are still using dial-up access, but claimed that the use of dial-up is declining. Is that really the case? To examine this, a follow-up study was conducted a year later in which out of a random sample of 1308 households that had internet access, 804 were connecting using a dial-up modem.
Let p be the proportion of all U.S. internet-using households who have dial-up access.

a. Write the null and alternative hypotheses in symbols:

H_0: H_a:

b. Which one of following is correct?

A. It is not safe to use the z-test for p since np_0 is not large enough.
B. It is not safe to use the z-test for p since $n(1-p_0)$ is not large enough.
C. It is not safe to use the z-test for p since the sample is not a random sample from the entire population (or cannot be considered as one).
D. It is safe to use the z-test for p.

c. The test statistic is z = −11.3

This means that

A. If p is really still .75, the sample proportion we got is 11.3 percentage points below it.
B. If p is really still .75, the sample proportion we got it 11.3 standard deviations below it.
C. If p is really still .75, the sample proportion we got is 11.3 percentage points above it.
D. If p is really still .75, the sample proportion we got it 11.3 standard deviations above it.

d. **The p-value is so small that the calculator tells us that it is essentially 0. State you conclusion <u>in context</u>.**