Name: _____ Date: _____

Elementary Statistics HW 8.2 Part 3

1. A package label includes a claim that the mean weight of the M&Ms is 0.8535g, and another package label includes the claim that the mean amount of aspirin in Bayer tablets is 325mg. Which has more serious implications: rejection of the M&M claim or rejection of the aspirin claim? Is it wise to use the same significance level for hypothesis tests of both claims?

2. A 0.05 significance level is used for a hypothesis test of the claim that when parents use the XSORT method of gender selection, the proportion of baby girls is different from 0.5. Assume that sample data consist of 55 girls born in 100 births, so the sample proportion of 0.55 results in a z score that is 1.00 standard deviation above 0.
    a. What is the claim in symbolic form? Also, state the "opposite" of the claim.

    b. Identify the null and alternative hypotheses.

    c. What is the value of the test statistic?

    d. What is the value of α?

    e. Is the test two-tailed, left-tailed, or right-tailed?

f. What is the critical value(s)?

g. Does the test statistic fall inside the critical region?

h. Should we reject the null hypothesis or fail to reject the null hypothesis?

i. What is the written conclusion from the table based on the original claim and your answer to part g?

For problems 3-4, express the claim symbolically and then write expressions that identify the type I error and the type II error that correspond to the given claim.

3. The proportion of people who write with their left hand is equal to 0.1.

   a. Claim:

   b. Type I error:

   c. Type II error:

4. The proportion of female statistics students is greater than 0.5.

    a. Claim:

    b. Type I error:

    c. Type II error: