Name: _____ **Date:** _____

Elementary Statistics **HW 8.3**

1. **In a Wakefield Research survey, respondents were asked if they ever hesitated to give a handshake because of a fear of germs. Of the respondents, 411 answered "yes" and 592 answered "no."**

   a. What is the sample proportion of "yes" responses and what notation is used to represent it?

   b. Which formula for the test statistic should be used if you were testing a claim regarding the proportion of "yes" responses?

2. **The drug Symbicort is used to treat asthma. In a clinical trial of Symbicort, 18 out of 277 treated subjects experienced headaches. Use a 0.01 significance level to test AstraZeneca's claim that less than 10% of treated subjects experienced headaches.**

   Step 1: What is the claim in symbolic form? Also, state the "opposite of the claim"

   Step 2: What are the null and alternative hypotheses?

   Step 3: Is the test two-tailed, left-tailed, or right-tailed?

   Step 4: What is the value of α?

   Step 5: What is the critical value?

Step 6: What is the value of the test statistic?

Step 7: Does the test statistic fall inside the critical region? So, should we reject the null hypothesis or fail to reject the null hypothesis?

Step 8: What is the written conclusion based on the original claim and your answer to part e?

3. **Data set 20 in appendix B lists data from 100 M&M's and 8% of them are brown. Use a 0.05 significance level to test the claim of the Mars candy company that the percentage of brown M&M's is equal to 13%. (Don't forget to include all 8 steps outlined in question 2)**

4. **In a 3M Privacy Filters poll, 806 adults were asked to identify their favorite seat when they fly, and 492 of them chose a window seat. Use a 0.10 significance level to test the claim that the majority of adults (over 50%) prefer window seats when they fly. (Don't forget to include all 8 steps outlined in question 2)**