1. Tommy Prothro, a marketing manager for Golden Snack Bars, has commissioned marketing research to determine if one recipe of snack bar is superior to another recipe. More than 400 persons who were "snack bar eaters" were involved in taste tests and, after tasting both recipes, they were asked how likely they would be to purchase the recipe the next time they purchased snack bars (1 = not at all likely, 5 = very likely). Tommy is now looking at the data and he sees that **recipe A had a 4.5 mean purchase intention rating** whereas recipe B had 3.8 mean purchase intention rating. **Tommy's brand manager felt this was "significant" evidence that the firm should produce recipe A.** But Tommy wanted more evidence so he asked the research firm to perform what statistical test?

2. Rebecca Sims is the general manager of a chain of auto parts stores. There are 400 stores in the country and they are divided up into seven divisions based upon geography. The firm prides itself on keeping close tabs on customer satisfaction, and Rebecca has decided to take a random sample of stores from each division to test a new measure of customer satisfaction: the dollar value of returned merchandise. Each sample store reports daily the dollar value of merchandise returned and an average is calculated for each division. **When Rebecca sees the first set of results, she wants to know if the differences between the division means are real or due to sampling error.** Rebecca should use which statistical test?

3. Joy Ward is the director of marketing at Helmsley College. She has been studying marketing research data collected on a national sample of high school seniors who are planning on attending college. Joy is trying to determine what appeal she should use in a direct mail campaign that will be targeted at students with high SAT/ACT scores who live within 500 miles of Helmsley. She is intrigued with the marketing research data that measures the students' ratings of importance on a number of factors affecting their decision to choose a particular college. Two of the factors are (1) individualized programs highly valued in the job market, (2) small campus atmosphere where professors know students' names. There are eight different factors and each was rated on the same 5-point importance scale ranging from "Very Important" to "Very Unimportant." Joy knows that Helmsley could ethically use either the "small campus" appeal or the "individualized program" appeal. The small campus appeal has a mean score of 4.3 on the importance scale, while the individualized program appeal has a mean score of 3.95. **Because both of these numbers indicate that these are important factors for students, she wants to know if the small campus appeal is really more important than the individualized appeal in the total college bound population.** Which of test should Joy run?
1. Do higher income households (open-ended question) spend more at Cost-Co (average purchase amount)?

2. What is the average income of WWU faculty?

3. Are Republicans or Democrats more likely to purchase a home security system (1 = not at all likely, 5 = very likely)

4. Are men or women more likely to buy season tickets (yes/no) to football games at WWU?

5. What is the relationship between Age and Household income, where both are open-ended questions?

6. A toy store owner believes that parents spend less than $100 on toys per visit to her store. How can she find out if she is right?

7. A product manager on Dove soap reviews the data from a survey about the Dove ad campaign and wonders if people were more positive about the ads with Fiona than the ads with Sue (1 = I liked the model in the ads very much, 5 = I dislike the model in the ads very much). How can he find out?