Review

- 1. Decide which inferential method is the most appropriate for each of the following practical research questions. Write the letter of the most appropriate statistical procedure next to each experiment or study question. Each procedure may be used more than once or not at all.
 - A) Analysis of Variance (ANOVA).
 - B) Chi-square test.
 - C) Linear Regression.
- 1. A study was done to determine if there is a difference in the mean income of people from five different religious affiliation.
 - 2. A study was done to determine if there is a relationship between the heights of married couples.
- 3. A study was done to determine where marital status (divorced, married and never divorced) and religious affiliation (A,B,C,D,none) are independent.
- 4. A farmer wants to know if the type of fertilizer (A, B, C) has an effect on the corn yield. He plans to measure the corn yield based on the weight (in kg) of the total harvest from each type of fertilizer.
- 5. A company that produces a certain fertilizer for corn compiled data from 500 farmers who are using their product. For each farmer, the company recorded how much fertilizer (in kg) they use per acre of corn field and how much corn they harvest per acre (in kg). The company wants to see if there is a relationship between the amount of fertilizer used per acre and the corn yield per acre.
 - 6. Suppose in the previous problem, the company decided to divide the farmers into 3 groups according to the amount of fertilizer they use (small, moderate, high). The company wants to know if there is a difference in the corn yield per acre (in kg) between the three groups.
 - 7. Suppose in the previous problem, the company also divided the farmers into 3 groups according to their corn yield per acre (low, moderate, high). The company wants to know if there is a relationship between amount of fertilizer used and corn yield per acre.
 - 8. The school district of La Crosse wants to see if marital status of parents (single, married, divorced) has an effect on the child's ACT score.
 - 9. The Department of Public Instruction of Wisconsin wants to know if there is a relationship between poverty rate (percentage of households with total income below the poverty level in the school district) and the high school drop out rate (percentage of students who drop out of high school). One hundred randomly selected school districts in Wisconsin were selected and for each school district the poverty rate and high school drop out rate were recorded.
 - 10. Seven hundred fifty patients were randomly assigned to receive one of four types of "Frontier medicine" treatment: (1) prayer, (2) MIT (Musis, imagery, and touch), (3) prayer and MIT, and (4) standard care (no prayer and no MIT). After six months, the patients were evaluated and determined if they suffered a major adverse cardiovascular event (e.g. heart attack) or not.