straw in cwt per acre, where cwt represents 100 lb. Use a 0.05 significance level to test for a correlation between yields from regular seed and kiln-dried seed. Are the results useful for addressing the main purpose of the experiment?

Regular	19.25	22.75	23	23	22.5	19.75	24.5	15.5	18	14.25	17
Kiln-dried	25	24	24	28	22.5	19.5	22.25	16	17.25	15.75	17.25

4. Agriculture Experiment: Hypothesis Test Refer to the same sample data given in the preceding exercise. Assume that the experiment was conducted to determine whether the new method of using kiln-dried seed is better. Conduct an appropriate hypothesis test.

5. Agriculture Experiment: Descriptive Statistics Using the data given in Exercise 3, find the mean and standard deviation of each of the two samples, then informally compare the results.

6. Defective Child Restraint Systems The Tracolyte Manufacturing Company produces plastic frames used for child booster seats in cars. During each week of production, 50 frames are selected and tested for conformance to all regulations by the Department of Transportation. Frames are considered defective if they do not meet all requirements. Listed below are the numbers of defective frames among the 50 that are tested each week. Use a control chart for p to verify that the process is within statistical control. If it is not in control, explain why it is not.

4 5 5 3 6 5 7 7 9 10

7. Overtime Football Games: Graph The overtime rule for football became effective in 1974. Since then, 3.8% of overtime games have ended in a tie, 25.6% ended with a touchdown, 70.1% ended with a field goal, and 0.5% ended with a safety. Construct a graph that is effective in displaying these results.

8. Designing Motorcycle Helmets Engineers must consider the breadths of male heads when designing motorcycle helmets. Men have head breadths that are normally distributed with a mean of 15.2 cm and a standard deviation of 2.5 cm (based on anthropometric survey data from Gordon, Churchill, et al.).

a. What percentage of men have head breadths greater than 17 cm? If helmets are made to accommodate only males with head breadths less than 17 cm, would those helmets exclude too many males?

b. If, due to financial constraints, the helmets are designed to fit all men except those with head breadths that are in the smallest 5% or largest 5%, find the minimum and maximum head breadths that the helmets will fit.

9. Sampling What is the difference between a voluntary response sample and a simple random sample? Which is generally better for the use of statistical methods?

10. Statistics Which of the following is the single *most* important factor for obtaining good results from a statistical study?

a. Size of the sample

b. Importance of the topic being addressed

c. Sampling method

d. Using data at the ratio level of measurement

e. Using graphs that are not misleading