20. Mendelian Genetics When Mendel conducted his famous genetics experiments with peas, one sample of offspring consisted of 428 green peas and 152 yellow peas.

a. Find a 95% confidence interval estimate of the percentage of yellow peas.

b. Based on his theory of genetics, Mendel expected that 25% of the offspring peas would be yellow. Given that the percentage of offspring yellow peas is not 25%, do the results contradict Mendel's theory? Why or why not?

21. Online Books A *Consumer Reports* Research Center survey of 427 women showed that 29.0% of them purchase books online.

a. Among the 427 women who were surveyed, what is the number of women who said that they purchase books online?

b. Find a 95% confidence interval estimate of the *percentage* of all women who purchase books online.

c. Can we safely conclude that less than 50% of all women purchase books online? Why or why not?

d. Can we safely conclude that at least 25% of all women purchase books online? Why or why not?

e. What do the results tell us about the percentage of *men* who purchase books online?

22. Want Boss's Job? In a *USA Today* survey, 20.8% of 144 respondents said that they aspired to have their boss's job. Construct a 95% confidence interval estimate of the *percentage* of all workers who aspire to have their boss's job. How are the results affected by the additional knowledge that the respondents chose to answer an online question posted on the *USA Today* web site?

23. Job Interviews In a Harris poll of 514 human resource professionals, 45.9% said that body piercings and tattoos were big grooming red flags.

a. Among the 514 human resource professionals who were surveyed, how many of them said that body piercings and tattoos were big grooming red flags?

b. Construct a 99% confidence interval estimate of the proportion of all human resource professionals believing that body piercings and tattoos are big grooming red flags.

c. Repeat part (b) using a confidence level of 80%.

d. Compare the confidence intervals from parts (b) and (c) and identify the interval that is wider. Why is it wider?

24. Job Interviews In a Harris poll of 514 human resource professionals, 90% said that the appearance of a job applicant is most important for a good first impression.

a. Among the 514 human resource professionals who were surveyed, how many of them said that the appearance of a job applicant is most important for a good first impression?

b. Construct a 99% confidence interval estimate of the proportion of all human resource professionals believing that the appearance of a job applicant is most important for a good first impression.

c. Repeat part (b) using a confidence level of 80%.

d. Compare the confidence intervals from parts (b) and (c) and identify the interval that is wider. Why is it wider?