**8.48** A sample of 20 pages was taken without replacement from the 1,591-page phone directory

*Ameritech Pages Plus Yellow Pages.* On each page, the mean area devoted to display ads was measured

(a display ad is a large block of multicolored illustrations, maps, and text). The data (in

square millimeters) are shown below:

0 260 356 403 536 0 268 369 428 536

268 396 469 536 162 338 403 536 536 130

(a) Construct a 95 percent confidence interval for the true mean. (b) Why might normality be an

issue here? (c) What sample size would be needed to obtain an error of ±10 square millimeters

with 99 percent confidence? (d) If this is not a reasonable requirement, suggest one that is.

**8.64** Biting an unpopped kernel of popcorn hurts! As an experiment, a self-confessed connoisseur of

cheap popcorn carefully counted 773 kernels and put them in a popper. After popping, the unpopped

kernels were counted. There were 86. (a) Construct a 90 percent confidence interval for the proportion

of all kernels that would not pop. (b) Check the normality assumption. (c) Try the *Very Quick*

*Rule*. Does it work well here? Why, or why not? (d) Why might this sample not be typical?