Quiz 8.1A AP Statistics Name:

1. A consumer watchdog organization estimates the mean weight of 1-ounce "Fun-Size" candy bars to see if customers are getting full value for their money. A random sample of 25 bars is selected and weighed, and the organization reports that a 90% confidence interval for the true mean weight of the candy bars is 0.992 to 0.998 ounces.

(a) What is the point estimate from this sample?

(b) What is the margin of error?

(c) Interpret the 90% confidence *interval* 0.992 to 0.998 in the context of the problem.

(d) Interpret the confidence *level* of 90% in the context of the problem.

2. A manufacturer of flashlights wants to know how well one of their newer styles is selling in a chain of large home-improvement stores. They select a simple random sample of 20 stores, record how many of the flashlights were sold in a 30-day period, and construct a 95% confidence interval for the mean number of flashlights sold.

   (a) If, instead of constructing a 95% confidence interval, the flashlight manufacturer constructed a 98% confidence interval, would the 98% interval be wider, narrower, or the same width as the 95% interval? Explain.

   (b) How would the width of confidence interval change if the flashlight manufacturer took a larger sample? Explain.

   (c) The 20 stores in the sample were actually the only stores who provided sales figures from 36 stores that were randomly chosen to be in the sample. Can the manufacturer adjust the confidence interval to take this nonresponse into account? If so, how? If not, why not?