Name: **Date:**

Elementary Statistics **HW 7.2 part 2**

1. Express the confidence interval 0.270 ± 0.087 in the form: $(p - E) < p < (p + E)$.

2. USA Today provided a "snapshot" illustrating poll results from 1910 professionals who interview job applicants. The illustration showed that 26% of them said the biggest interview turnoff is that the applicant did not make an effort to learn about the job or the company. The margin of error was given as ± 3 percentage points.

   a. What is the best point estimate (as a decimal) that was used by USA today?

   b. What is the margin of error as a decimal?

   c. Take the best point estimate, add and subtract the margin of error, and express the confidence interval for the proportion of professionals that feel that the biggest interview turnoff is that the applicant did not make an effort to learn about the job or the company.

3. In another USA Today survey, 20.8% of 144 respondents said they aspired to have their boss's job. The margin of error was given as ± 5 percentage points.

   a. What is the best point estimate (as a decimal) that was used by USA today?

   b. What is the margin of error as a decimal?

   c. Take the best point estimate, add and subtract the margin of error, and express the confidence interval for the proportion of adults that aspired to have their boss's job.

4. From a KRC Research poll in which respondents were asked if they felt vulnerable to identity theft: n = 1002, x = 531 who said "yes." Use a 95% confidence level.

   a. Use the sample data to find the following:

      n =

      $\hat{p}$ =

      $\hat{q}$ =

   b. Find the best point estimate of the population proportion p

   c. Identify the value of the margin of error E

      CL =

      $\alpha =$

      $\alpha/2 =$

      Area to the left of $Z\alpha/2$=

      What is the critical value, $Z\alpha/2$?

      $$E = Z\alpha/2 \bullet \sqrt{\frac{\hat{p}\hat{q}}{n}}$$

   d. Construct the 95% confidence interval

   e. Write a statement that correctly interprets the confidence interval

5. From a 3M Privacy Filters pool in which respondents were asked to identify their favorite seat when they fly: n = 806, x = 492 who chose the window seat. Use a 99% confidence level.

   a. Use the sample data to find the following:

      $n =$

      $\hat{p} =$

      $\hat{q} =$

   b. Find the best point estimate of the population proportion p

   c. Identify the value of the margin of error E

      CL =

      $\alpha =$

      $\alpha/2 =$

      Area to the left of $Z\alpha/2$=

      What is the critical value, $Z\alpha/2$?

      $$E = Z\alpha/2 \bullet \sqrt{\frac{\hat{p}\hat{q}}{n}}$$

   d. Construct the 99% confidence interval

   e. Write a statement that correctly interprets the confidence interval