Population Mean Confidence Interval Practice

1. A scientist conducting an experiment on reaction time for a new experiment design finds that the average reaction time is 2 hours with a standard deviation of 15 minutes. Note that the scientist has only conducted 15 trials due to budget constraints.
    a. What type of distribution do you use and why?

    b. What is the point estimate?

    c. What is the margin of error?

    d. Construct a 95% confidence interval.

    e. Interpret.

2. A basketball player is recording his progress throughout the off season on number of 3-point shots he can make. Assuming he attempts 75 shots per training session, he has an average of 35 successful shots with a standard deviation of 5 shots.
    a. What type of distribution do you use and why?

b. What is the point estimate?

c. What is the margin of error?

d. Construct a 90% confidence interval.

e. Interpret.

3. A professor finds that that the average test grade of his 48 students is 56 with a standard deviation of 8.
    a. What type of distribution do you use and why?

    b. What is the point estimate?

    c. What is the margin of error?

d. Construct a 99% confidence interval.

e. Interpret.

4. A baker finds that on average, 14 batches of cookies are sold throughout a weekday, with a standard deviation of 0.75. Answer the questions below if the baker makes 23 batches.
   a. What type of distribution do you use and why?

   b. What is the point estimate?

   c. What is the margin of error?

   d. Construct the confidence interval.

   e. Interpret.