Name: **Statistics Classwork 7**

7-A Confidence Intervals for a Mean

1. Find the critical value for the following confidence intervals.

a) $n = 7$, $c = .95$, $s = 14$ b) $n = 28$, $c = .90$, $s = 1.09$ c) $n = 36$, $c = .99$, $\sigma = 2.97$

2. Neil tests eight random fifth grade boys on how many situps they can do in a minute: 25, 61, 44, 45, 38, 65, 50, 48. Calculate s and use it to give an 80% confidence interval for the mean.

7-B Confidence Intervals for a Proportion

3. In a Gallop survey last March of 1019 American adults, 10% said they believed global warming would never happen. Make a 95% confidence interval.

4. In a Gallup poll last three weeks after the election, 56% of Republicans said they believed Clinton won the popular vote. The poll reported a margin of error of ±5%. Express these results as a confidence interval, and state the confidence level.

7-C Sample Size Needed for a Specified Margin of Error

5. Vineha's company makes batteries. If she already has an estimate of $\sigma \approx 42$ minutes, how many should she test in order to have a margin of error of ±15 minutes in a 99% confidence interval for battery life?

6. Given a preliminary estimate of 8%, how many people should Jenny survey to achieve a 2% margin of error in a 90% confidence interval for the proportion of Americans who suffer from alcohol abuse or dependence?