Homework #6 - Chapters 7 and 8 (Montgomery & Runger, 5ed)

Parameter Estimation
    Reading Assignment   Read pages 223 - 225
    Problems

1. Forty-nine one-pound cartons of margarine were analyzed to determine the polyunsaturated fat content. The sample average was 11.65 ounces, with standard deviation of 0.39 ounces.
Estimate the population mean (95% and 99% confidence level).

Answers: 95% $u = 11.65 \pm 0.11$ equivalently $11.54 < u < 11.76$
           99% $u = 11.65 \pm 0.14$ equivalently $11.51 < u < 11.79$

2. An independent test agency tested 100 light bulbs and found the average operating time to be 1570 hours with a standard deviation of 120 hours.
Estimate the population mean (95% and 99% confidence level).

Answers: 95% $u = 1570 \pm 23.5$ equivalently $1546 < u < 1594$
           99% $u = 1570 \pm 31.0$ equivalently $1539 < u < 1601$

3. A random sample of 25 reportedly healthy adult body temperatures were found to average 98.2 with a standard deviation 0.69 degrees Fahrenheit.
Estimate the population mean at the 95% confidence level.
Note: Use *t* Distribution

Answers: 95% $u = 98.2 \pm 0.28$ equivalently $97.9 < u < 98.5$

Confidence Intervals
    Reading Assignment   Pages 225 - 230 and Pages 251 - 276
    Problems
   Pages 228 - 230 Examples 7-1, 7-2, 7-3
   Page 230   #7-3; 7-5; 7-7; 7-9
   Page 261   #8-13; 8-15
   Page 266   #8-37 b,c; 8-39 b,c
   Pages 271 - 273 Examples 8-7, 8-8
   Page 273   #8-53; 8-59