

STAT200 Problem Solutions for Chapter 7

*These truly are **bare** answers. Yours must be much more explanatory.*

2.24: $0.638 < p < 0.662$.

2.30: $0.612 < p < 0.918$. The method appears effective because the proportion of boys is substantially greater than half.

2.44: 601.

3.16: $154 < \mu < 224$.

3.28: $141.4 < \mu < 203.6$. It is unrealistic to know σ .

3.34: 50.

4.20:

a. $164 < \mu < 186$.

b. $111 < \mu < 137$.

c. 186.

d. The confidence intervals don't overlap at all, suggesting that the population means are likely to be significantly different, and the mean heart rate for those who shovel snow manually appears to be higher than for those who use the electric thingamajig.

4.26: 95% CI for 4000 BCE: $125.7 < \mu < 131.8$. 95% CI for 150 CE: $130.1 < \mu < 136.6$. The two CI overlap, so it's possible that the two population means are the same, and we cannot conclude that the sizes have changed.

5.14: 47.

5.18: $0.038 < \sigma < 0.069$ (grams); no, because the confidence interval limits contain the old standard deviation of 0.062 g, so there is not strong evidence that the new equipment reduces variation.

5.24:

a. $0.33 < \sigma < 0.87$ (min).

b. $1.25 < \sigma < 3.33$ (min).

c. The variation appears to be lower with a single line. The single line appears to be better.