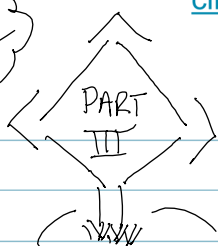
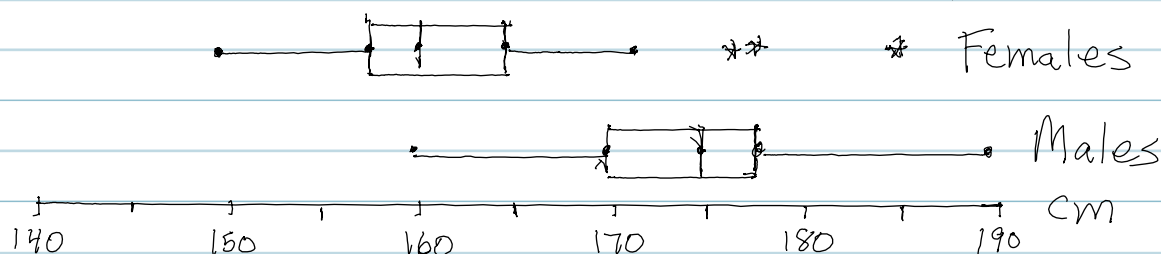


Section 2.6



Data Exploration Boxplots & Outliers

Stacked Boxplots: Adult Heights (cm)



* Adult Heights (5 pt summaries below)

Females: 148.0, 156.8, 159.8, 164.2, 170.4

outliers: 175.9, 176.4, 184.1

Males: 159.8, 168.6, 174.5, 177.6, 189.1

outliers: none

Compare the populations represented by these samples using the process of Procedure 2.2.1.

I. Hypothesis: The median height is larger for males.

II. Summary Values: Females: $\tilde{x} = 159.8$ cm.
Males: $\tilde{x} = 174.5$ cm.

III. Shift: The Male sample is shifted to the right.

IV. Overlap: The samples do overlap, but the middle 50% regions are separated by a gap.

V. Spread: Female IQR = $164.2 - 156.8 = 7.4$ cm
Male IQR = $177.6 - 168.6 = 9.0$ cm.

VI. Sample Size: both samples are of size 30 $\rightarrow$ small $\rightarrow$ weakens inference.

VII. Extreme Cases: 3 outliers (high) w/ women, but they do not influence the medians.

VIII. Make an Inference: The samples seem to support the claim that the median height is greater for the males. This is less certain due to small samples.