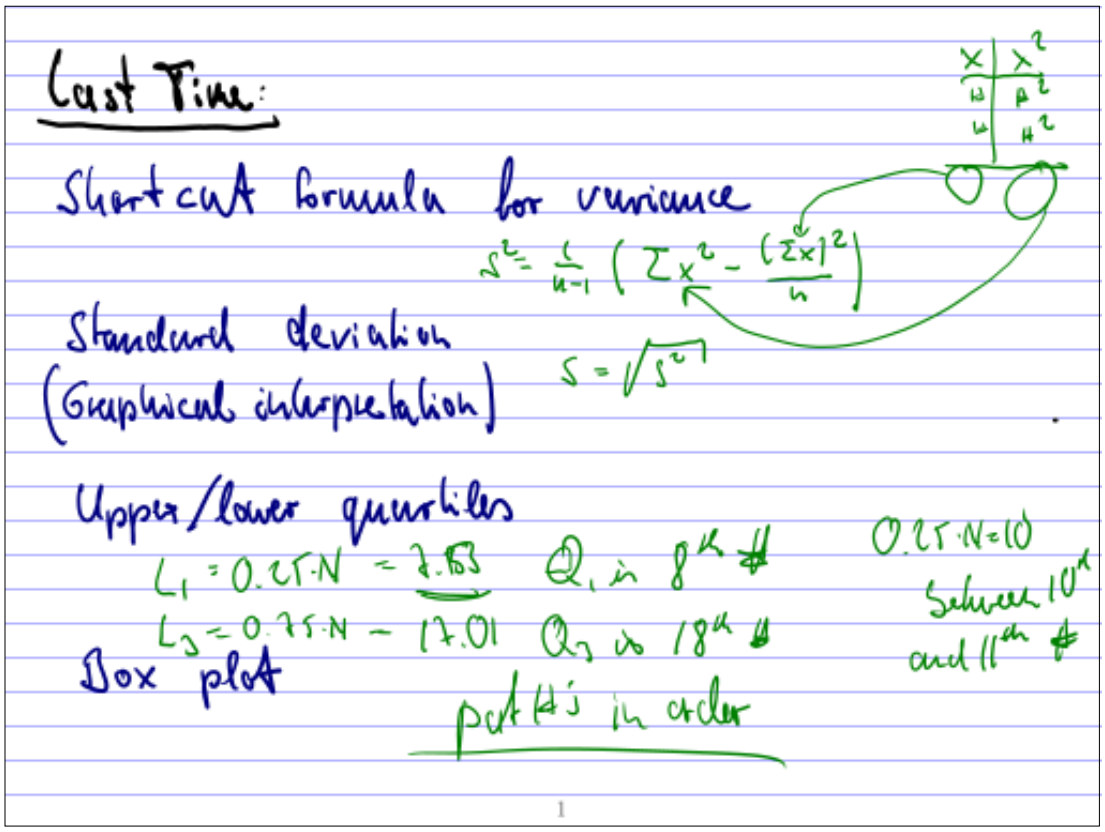
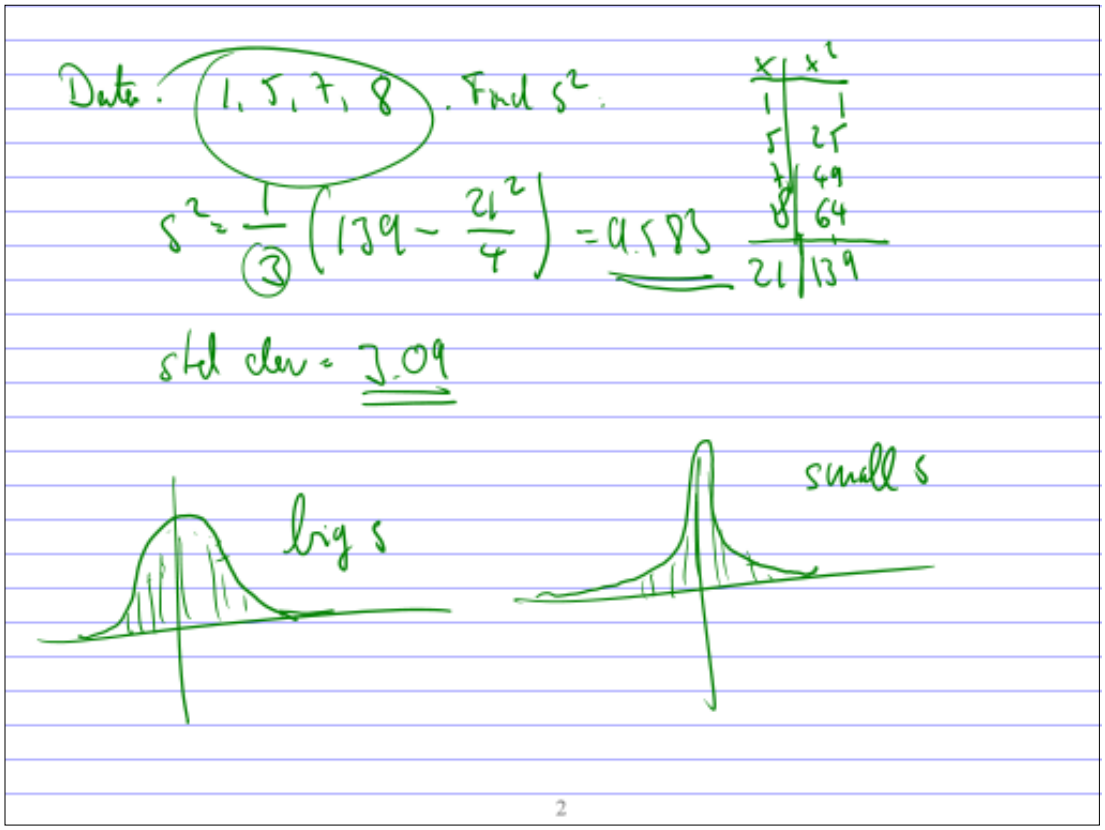
Panel 1



Panel 2



Panel 3

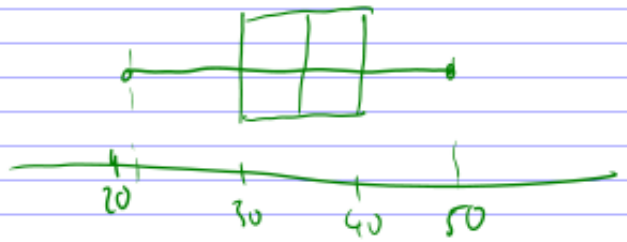
Box plot: $Q_1 = 30$

$Q_3 = 40$

median = 35

left = 50

low = 21



3

Panel 4

Percentiles:

A generalized form of quartiles is Percentiles

n-th percentile is # with n% less and (100-n)% bigger than it

Ex: If your SAT results put you in the 95th-percentile, what does this mean?

Good news: you're in top 5%!

4

Panel 5

Finding the x^{th}-Percentile

Position: $x \cdot N$, round up as before for quartiles
Take the number at the corresponding position.

Ex: Suppose exam scores were: 75, 65, 80, 90, 97, 92, 95, 62, 87, 99, 93, 71, 86. Find 80th percentile

$0.8 \cdot 13 = 10.4 \Rightarrow 11^{th}$ # is it: 93

5

Panel 6

Estimating the Standard Deviation

s is a lot of work to compute.
For a symmetric, bell shaped distribution you have:

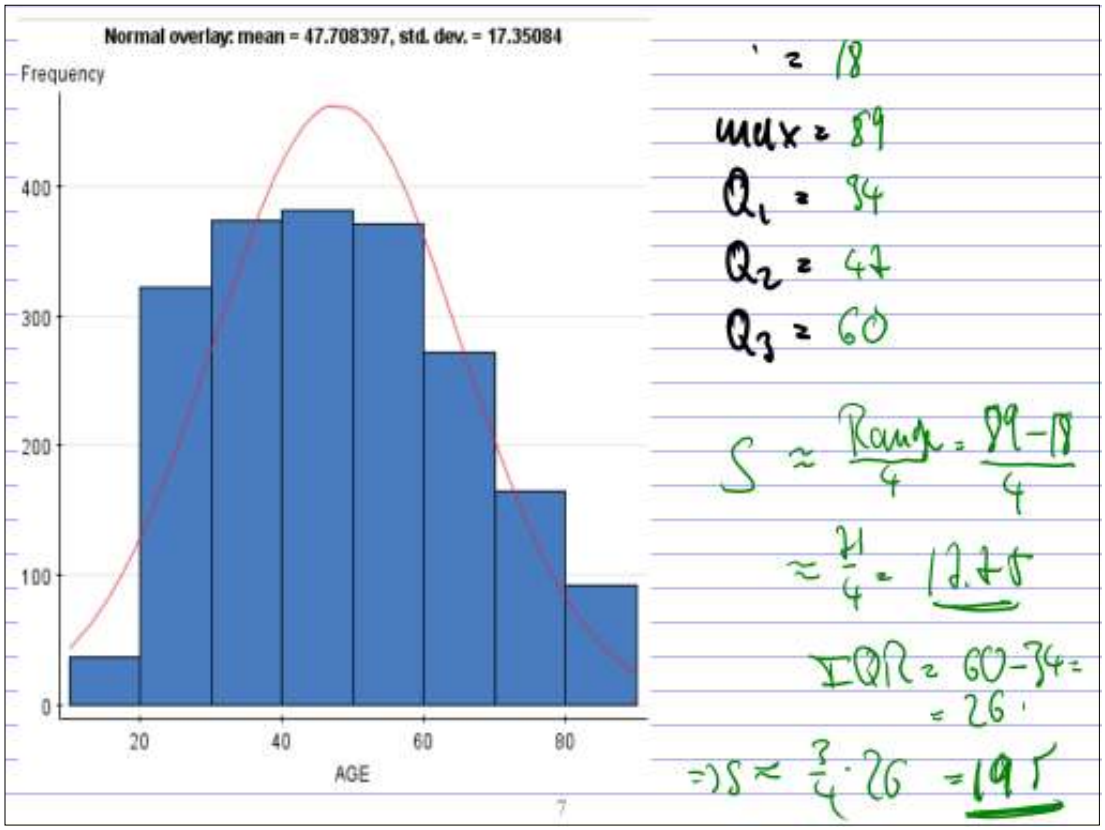
68% of data is between $\bar{x} - s$, $\bar{x} + s$
95% of data is between $\bar{x} - 2s$, $\bar{x} + 2s$
100% of data is between $\bar{x} - 3s$, $\bar{x} + 3s$

$\approx 4s \approx$ range

$s \approx \frac{\text{Range}}{4}$

6

Panel 7



Panel 8