

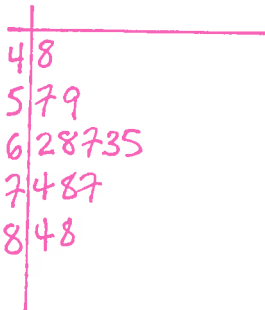
Show all relevant work!

1. Thirteen students were sampled from an exercise class and their pulse rates are shown below.

Pulse Rates: 62, 68, 48, 57, 74, 67, 84, 63, 88, 65, 59, 78, 77

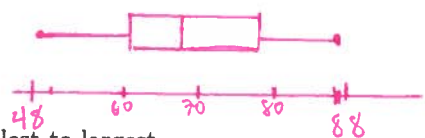
- (a) Construct a stem-and-leaf plot for these data.
 (b) Construct a box plot for these data showing all the numbers in the five number summary.

(a)



(b) FOR BOXPLOT WE USED THE MEDIAN AND QUANTILES. THE MEDIAN IS THE $\frac{1+13}{2} = 7^{th}$ DATA POINT (IN ORDER). WE CAN SEE IT'S IN THE 60'S SO WE ORDER THE 60'S: 6|23578 AND COUNT UP FROM THE LOWEST (48).

$\frac{1+13}{2} = 7^{th}$
 $\frac{1+6}{2} = 3.5$
 $\frac{8+13}{2} = 10.5$
 MED: 67
 $Q_1: (59+62)/2 = 60.5$
 $Q_3: (77+78)/2 = 77.5$



2. Listed below are 29 ages for Academy Award winning best actors in order from smallest to largest.

18; 21; 22; 25; 26; 27; 29; 30; 31; 33; 36; 37; 41; 42; 47; 52; 55; 57; 58; 62; 64; 67; 69; 71; 72; 73; 74; 76; 77

Find the 40th percentile.

$0.4 \times (1+29) = 12^{th}$ DATA POINT

which means that 40% of the award winners are 37 or younger.

3. Consider the daily high temperatures in June listed below.

61, 61, 62, 64, 66, 67, 67, 67, 68, 69, 70, 70, 70, 71, 71, 72, 74, 74, 74, 74, 75, 75, 75, 76, 76, 77, 78, 78, 79, 79, 95

Without actually computing the mean, which would you expect to be larger, the median or the mean? Why?

I would expect the mean to be larger since the data are skewed right by the 95 at the end.

4. Both data sets below have a mean of 19. Which data set would you expect to have a larger standard deviation from the mean? Why?

Set A: 1, 1, 1, 1, 1, 37, 37, 37, 37
 Set B: 1, 5, 9, 13, 17, 21, 25, 29, 33, 37

SET A - SINCE ALL THE DATA ARE AT THE EXTREMES - NOTHING NEAR THE MEAN.

5. What number would you add to this list in order for the mean to be 20?

14, 19, 23, 29, 31

x	x-20
14	-6
19	-1
23	3
29	9
31	11

} 16

IN ORDER TO BALANCE THE MEAN AT 20 WE NEED THE DEVIATIONS TO SUM TO 0. SINCE THE FIRST FIVE DEVIATIONS ADD TO 16 WE NEED THE LAST

Ans: 4