$$\sigma = \sqrt{\frac{\sum (x-\bar{x})^2}{n}}$$

1a) Determine the range, mean and median of the following test scores.

range = 90 − 56 = 34

History Test 1 Scores (out of 100)

90	84	77	66
89	84	77	65
86	82	75	65
86	81	72	61
84	79	70	56

mean = $\frac{1529}{20}$ = 76.5

median $\frac{79+77}{2}$ = 78

b) If a score of 25 was added to the list, which measure of central tendency is most affected? mean

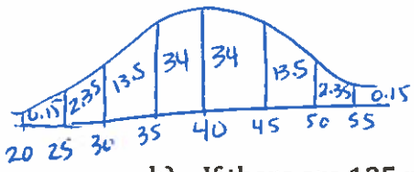
2) A set of data is normally distributed. What percent of the data is within one standard deviation of the mean? Two standard deviations?

1 standard deviation = 34 + 34 = 68%

2 standard deviations: 34 + 13.5 + 13.5 + 34 = 95%

3) The ages of participants in a bonspiel are normally distributed, with a mean of 40 and a standard deviation of 5 years.

a) What percent of the curlers are between 35 and 50?



34 + 34 + 13.5 = 81.5%

b) If there are 125 participants in the bonspiel, how many are less than 35 years?

Percent less than 35 yrs: 0.15 + 2.35 + 13.5 = 16%

16% of 125 = 0.16 × 125 = 20 people

4) Karum and Brandon are laying interlocking bricks. Their supervisor records how many bricks they lay each hour.

Hour	1	2	3	4	5	6	mean
Karum	212	193	204	195	182	216	200
Brandon	230	195	214	207	218	191	209

Which worker is more consistent? Hint: determine the standard deviation of each.

Karum

$(x-\bar{x})$	$(x-\bar{x})^2$	
212 − 200	$(12)^2$	144
193 − 200	$(-7)^2$	49
204 − 200	$(4)^2$	16
195 − 200	$(-5)^2$	25
182 − 200	$(-18)^2$	324
216 − 200	$(16)^2$	256

Total : 814

$\sigma = \sqrt{\frac{814}{6}} = \sqrt{135.7}$

$\sigma = 11.6$

Brandon

$(x-\bar{x})$	$(x-\bar{x})^2$	
230 − 209	$(21)^2$	441
195 − 209	$(-14)^2$	196
214 − 209	$(5)^2$	25
207 − 209	$(-2)^2$	4
218 − 209	$(9)^2$	81
191 − 209	$(-18)^2$	324

Total : 1071

$\sigma = \sqrt{\frac{1071}{6}} = \sqrt{178.5} = 13.3$

Karum is more consistent. He has a lower standard deviation

5. Refer to the histogram.

I estimated

a) How many students wrote the exam?

8 + 10 + 22 + 29 + 37 + 55 + 39 + 20 + 10 + 4 = 234 students

b) Sketch a frequency polygon.