Maths: Measure of Location

Task | Answers

Compare distributions using average and range

1. Susi and Len play cricket for a school team. The number of runs that they score over a season per match are as follows:

											Total
Susi	0	10	30	1	35	5	9	7	40	0	143
Len	13	14	16	12	8	13	14	9	15	9	123

Calculate the mean and the range for each player and **comment on your findings.**

The mean:

Susi = 143/10 = 14.3

Len = 123/10 = 12.3

The range:

Susi = 40 – 0 = 40

Len = 16 – 8 = 8

Comments:

Susi has a higher mean than Len which shows that, on average, Susi scores more runs per game than Len.

Len has a lower range than Susi which shows that Len is more consistent with the number of runs that he scores per game.

2. Ted and Tom take a weekly test in school. Their results are shown below:

Ted	14%	99%	20%	80%	59%	9%
Tom	45%	42%	52%	48%	47%	42%

Calculate the median and the range for each student and **comment on your findings.**

The median:

Ted: 39.5%

Tom: 46%

The range:

Ted: 90%

Tom: 10%

Tom has a higher median mark which shows that he generally scores higher in the tests than Ted. Tom also has a lower range which shows that he is more consistent in his scores than Ted.

3. Jessica and Mark swim train every week. The number of lengths that they swim are as follows:

Jessica	30	26	38	30	28	30	29	39
Mark	9	42	60	32	1	38	32	16

Jessica states 'On average, I swim more than Mark.'

Which average is Jessica referring to? You must show your working.

Median average:

Jessica: 30 lengths

Mark: 32 lengths

Mode average:

Jessica: 30 lengths

Mark: 32 lengths

Mean average:

Jessica: 250 / 8 = 31.25 lengths

Mark: 230 / 8 = 28.75 lengths

The mean average is the only average that gives a higher value for Jessica's compared to Mark's data.

Jessica must be referring to the mean average.