



## Comparing Distributions – Questions

Q1) Calculate the semi-interquartile range for the following sets of numbers.

a) 12 34 45 2 33 56 78 22 12 15 78 54

b) 2 4 6 16 25 3 8 15 58 13 56

Q2) Ten couples took part in a dance competition. The couples were given a score in each round. The scores in the first round were

16 27 12 18 26 21 27 22 18 17

a) Calculate the median and semi-interquartile range of these scores.

b) In the second round, the median was 26 and the semi-interquartile range was 2.5.

Make two valid comparisons between the scores in the first and second rounds.

Q3) A runner records her times over a two-week period. In the first week, her mean time was 54 seconds and the standard deviation of her results was 4.5.

In the second week, her mean time was 51 seconds and the standard deviation of her results was 3.8. Make two comparisons about her results.

Q4) Jack called his internet provider on six occasions to report connection problems. On each occasion he noted the length of time he had to wait before speaking to an adviser. The times (in minutes) were as follows:

13 16 10 22 5 12

a) Calculate the mean and standard deviation of these times

b) Sophie also called the same internet provider, on several occasions, to report connection problems. Her mean waiting time was 15 minutes and the standard deviation was 4.3 minutes. Make two valid comments comparing Sophie's waiting times with Jack's.



## Comparing Distributions – Solutions

Q1) a) 20.75

b) 10.5

Q2) a) Median = 19.5 and semi-interquartile range = 4.5

b) Since the median score has increased in the second round, on average the couples scored higher. Since the semi-interquartile range has decreased, the couple's scores are more consistent in the second round.

Q3) In the second week, her average time is faster since the mean is lower than in the first week. In the second week, her times are more consistent since the standard deviation is lower.

Q4) a) Mean = 13 and standard deviation = 5.7

b) On average, Sophie waited longer since her mean waiting time is higher. Since the standard deviation is lower for Sophie, her waiting times were more consistent than Jack's.