AQA - Measure of Location and spread – GCSE Statistics – 2021

1. June/2022/Paper_8382/1H/No.2

Two variables have no correlation.

Which of these could be the value of the Spearman's Rank Correlation Coefficient between the two variables?

Circle your answer.

[1 mark]

1 | – 1 | 0.05 | 0.5

2. June/2022/Paper_8382/2H/No.2

Which one of these is **not** a measure of spread?

Circle your answer.

[1 mark]

interdecile range | interpercentile range

standard deviation | skewness

3. June/2022/Paper_8382/2H/No.14

The number of days between snow events (a day when it snows) in a Scottish town during winter 2020 – 2021 was recorded.

The data has been **ordered by size**.

0 0 0 1 1 3 4 4 10 28

For example, a value of 0 indicates it snowed on two consecutive days.

(a) Rhona says that it snowed on three consecutive days.

Is she correct?

Tick (✓) a box.

Yes ☐ No ☐ Cannot tell ☐

Give a reason for your answer.

[1 mark]

(b) Use the formulae

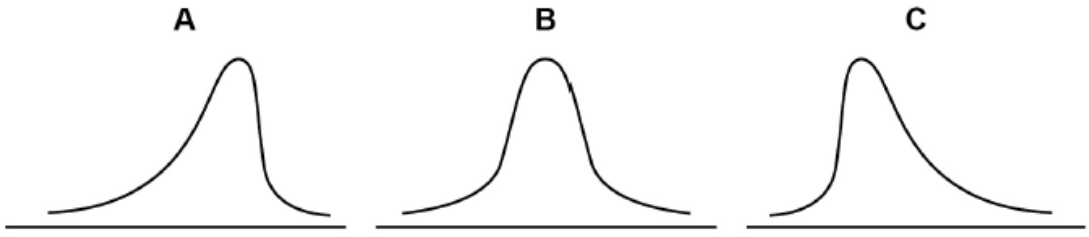
$$\text{skew} = \frac{3(\text{mean} - \text{median})}{\text{standard deviation}} \quad \text{and standard deviation} = \sqrt{\frac{\sum x^2}{N} - \left(\frac{\sum x}{N}\right)^2}$$

to show that the skew of the data is +1.14 (to 2 decimal places).

[6 marks]

(c) Circle the letter of the diagram that shows data with a positive skew.

[1 mark]



4. June/2022/Paper_8382/2F/No.1

A set of data is ordered from smallest to largest.

What is the name given to the measure that is one quarter along the ordered data?

Circle your answer.

[1 mark]

range lower quartile upper quartile median

5. June/2022/Paper_8382/2F/No.2

Look at these sets of data.

A 2, 4, 5, 5, 7, 8

B 0, 5, 3, 6, 1, 4

C 9, 8, 7, 7, 6, 5

D 5, -1, 3, 2, 0, 1

Circle the letter below for the data set which has a **different range** to the others.

[1 mark]

A **B** **C** **D**

6. June/2022/Paper_8382/2F/No.16

Here is an experiment which is designed to find the best trained dog out of Troy, Buddy, Bruno, Murphy and Bumble.

- Each of the five owners asks their dog to sit and then walks away.
- The time for which each dog sits is recorded.

The experiment is repeated 4 more times.

(a) Here are the data for the five dogs.

	Time for which each dog sits (nearest second)				
Dog	**Experiment 1**	**Experiment 2**	**Experiment 3**	**Experiment 4**	**Experiment 5**
Troy	15	18	19	13	13
Buddy	21	22	14	20	12
Bruno	39	20	17	12	12
Murphy	24	17	18	2	24
Bumble	7	12	14	12	10

The dog which sits for the longest **average** time is declared the winner.

Give a reason why each of the three dogs stated on the next page could be declared the winner.

In each answer you **must** state or calculate appropriate measures.

[6 marks]

Buddy

Bruno

Murphy

(b) Give **one** reason why this experiment is unlikely to have high validity.

[1 mark]