Statistics

N5 Maths Exam Questions

Source: 2019 P1 Q5 N5 Maths
(1) The midday temperatures in Grantford were recorded over a nine day period. The temperatures, in °C, were   4   7   4   3   6   10   9   5   3 (a) Calculate the median and semi-interquartile range for these temperatures.   Over the same nine day period the midday temperatures in Endoch were also recorded. The median temperature was 8 °C, and the semi-interquartile range was 1·5 °C. (b) Make two valid comments comparing the midday temperatures of Grantford and Endoch during this period.

Answers: $(a) Median = 5, SIQR = 2.25$
    (b) *On average temperatures in Grantford are lower*
        Temperatures in Grantford are less consistent

Source: 2015 P1 Q5 N5 Maths
(2) The standard deviation of 1, 2, 2, 2, 8 is equal to $\sqrt{a}$. Find the value of a.
Answer: $a = 8$

(3) A farmers' market took place one weekend.

Stallholders were asked to record the number of customers who visited their stall.

The number of customers who visited six of the stalls on Saturday were as follows:

$$120 \quad 126 \quad 125 \quad 131 \quad 130 \quad 124$$

(a) Calculate the mean and standard deviation of the number of customers.

The mean number of customers who visited these six stalls on Sunday was 117 and the standard deviation was 6·2.

(b) Make two valid comments comparing the number of customers who visited these stalls on Saturday and Sunday.

Answers: (a) $Mean = 126,\ SD = 4.049$

$\quad\quad\quad (b)$ $On\ average, the\ number\ of\ customers\ was\ higher\ on\ Saturday$
$\quad\quad\quad\quad The\ number\ of\ customers\ was\ less\ varied\ on\ Saturday$

(4) The number of calls received by the police was recorded over 10 days.

The results are shown below.

$$198 \quad 216 \quad 218 \quad 230 \quad 232 \quad 247 \quad 248 \quad 250 \quad 265 \quad 267$$

Find the semi-interquartile range of this data.

Answer: $SIQR = 16$

(5) Gym members are asked to fill out a questionnaire to rate the quality of service provided.

They are asked to give a rating on a scale of 1 to 6.

The ratings given by five members were as follows:

$$1 \quad 4 \quad 6 \quad 3 \quad 6$$

In its simplest form, the standard deviation of these ratings can be written as $\dfrac{a\sqrt{b}}{2}$.

Find the values of a and b.

Answers: $a = 3, \ b = 2$

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(6) 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:

$$13 \quad 16 \quad 10 \quad 22 \quad 5 \quad 12$$

(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 waiting times.

Answers: $(a)\ Mean = 13\ min \quad (b)\ SD = 5.7\ min$
$(b)\ On\ \boldsymbol{average}, Sophies\ waiting\ time\ was\ longer.$
$Sophies\ waiting\ times\ were\ \boldsymbol{more\ consistent}.$