Deviation indicates how spreadout a dataset is !

# Past Paper Statistics Type Questions Intermediate 2

Created by Mr.Lafferty@mathsrevision.com ( Scientific Calculator Required )

Q1. (a) Find the standard deviation of the the data below, giving your answer to 1 decimal place.

5 2 3 5 2

(3 marks)

(b) Find the standard deviation for the data 7 4 5 7 4 (1 marks)

Q2. A new central heating system is installed in a house. Sample temperatures, in degrees Celsius, are recorded below.

23 21 23 19 24 22

(a) For this sample data, calculate the mean and standard deviation correct to 1 decimal place. (1 mark)

(3 marks)

(b) The target temperature is 21 ° Celsius.
The system is judged to be operating effectively if the mean temperature is within 0.3 ° Celsius
of the target temperature and the standard deviation is less than 2 ° Celsius

Is the system operating effectively Explain your answer (1 mark)

Q3. In a bakery , a sample of six fruit loaves is selected and the weights, in grams, are recorded.

402 401 393 395 392 399

For the above the data the mean is found to be 397 grams.

(a) Calculate the Standard Deviation to 1 decimal place. (3 marks) (3 marks)

(b) New methods are introduced to ensure more consistent weighs. Another sample is then taken and the mean and standard deviation found to be 397 grams and 5.5 grams respectively.

Are the new methods successful ? Explain your answer (1 marks)

Q4. The height, in millitres, of six seedlings are given below:

17 16 14 19 19 13

(a) Calculate the mean and standard deviation. (1 mark)

(3 marks)

(b) Later the same six seedlings are measured again. **Each** has grown by 3 millimetres.

State the value of the mean and standard deviation. (1 mark)

(1 mark)

Q5. A gardener grows tomatoes in his greenhouse. The temperatures of the greenhouse, in degrees Celsius , is recorded every day at noon for one week.

23 25 21 23 17 23 19

(a) For the given temperatures, calculate the mean and standard deviation correct to 1 decimal place. (1 mark)

(3 marks)

(b) For best growth, the mean temperature should be 22 ± 4 °C and the standard deviation should be less than 3 °C.

Are the conditions in the greenhouse likely to result in best growth? Explain your answer (1 mark)

Q6. Harry records the amount, in pounds, he earned from his part-time job each week for ten weeks.

18 18 19 20 18 19 19 22 15 19

He calculates that $\Sigma x =$ 187 and $\Sigma x^2 =$ 3525

where x is the amount in pounds he earned each week.

(a) Calculate the mean. (1 mark)

(b) Calculate the standard deviation. (3 marks)

(c) Irene and Harry compare their earnings over the ten week period.
For each week of the ten weeks Irene earns exactly £ 3 more than Harry.

State the mean amount Irene earned per week (1 mark)

State the standard deviation of Irene's earnings (1 mark)