Mean and standard Deviation

1. Calculate the mean and standard deviation of

(a) 14 15 18 20 23 18 (b) 41 45 34 45 46 47 50

2. The costs of a can of diet coke in 6 different shops are

47p 49p 50p 44p 48p 44p

Calculate the mean and standard deviation of these costs.

3. (a) The prices of a bag of sugar in 6 different shops are

86p 88p 84p 79p 81p 86p

Calculate the mean and standard deviation of these prices.

(b) In 6 different shops the same bag of sugar has a mean price of 87 pence and a standard deviation of 5.2 pence.
Make two comparisons between the prices in the two sets of shops.

4. (a) The marks of 7 pupils in an advanced higher maths exam were

77 67 43 90 66 93 75

Calculate the mean and standard deviation of these marks.

(b) Another group of 7 pupils who sat the same exam had a mean of 78 and a standard deviation of 3.2.
Make two comparisons of the marks of the two groups.

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

18 21 24 17 23 14 16

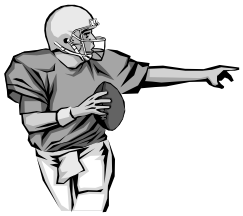
(a) Calculate the mean and standard deviation of these temperatures.

For best growth the mean temperature should be (20 ± 5)ºC and the standard deviation should be less than 5ºC.

(b) Are the conditions in the greenhouse likely to result in best growth?

6. The number of points scored by an American football team over 7 matches were

34 26 20 23 21 18 26



Calculate the mean and standard deviation of these scores.

7. (a) The number of pupils in 7 third year classes in a secondary school are

25 24 28 22 24 30 22

Calculate the mean and standard deviation of the class sizes.

(b) In the same school the mean and standard deviation of the number of pupils in 7 fourth year classes are 22 and 4.4 respectively.

Make two comparisons between the class sizes in third year and in fourth year.

8. Scientists are studying the differences between crocodiles and alligators.

(a) The lengths of 6 crocodiles are recorded in feet. The results are shown below.

18.2 23 17.3 22 20.8 18.1

Calculate the mean and standard deviation of these lengths.

(b) The lengths of 6 alligators are recorded. The results give a mean of 16.8 feet and a standard deviation of 1.85 feet.

Make two valid comparisons between the lengths of the crocodiles and the alligators

9. Calculate the mean and standard deviation of 10 numbers where

$$\sum x = 180 \quad \text{and} \quad \sum x^2 = 3356$$

10. (a) The cost of an MP3 player in 6 different British shops is

£66 £55 £70 £53 £61 £55

Calculate the mean and standard deviation of these costs.

(b) In 6 different Italian shops the same MP3 player has a mean cost of £55 and a standard deviation of £2.60.

Make two valid comments comparing the costs of the MP3 player in Britain and Italy.