Standard Deviation

1. Fiona checks out the price of a litre of milk in several shops.

   The prices in pence are:

   49 44 41 52 47 43

   a) Find the mean price of a litre of milk. 1 KU

   b) Find the standard deviation of the prices. 2 KU

   c) Fiona also checks out the price of a kilogram of sugar in the same shops and finds that the standard deviation of the prices is 2.6.
   Make one valid comparison between the two sets of prices. 1 RE

2. A group of fifth year students from Alloa High School were asked how many hours studying they did in the week prior to their exams.

   The results are shown below.

   14 7 9 12 19 10 16 15

   (a) Use an appropriate formula to calculate the mean and standard deviation of these times. 3 KU

   (b) A similar group of students from Alloa Academy were asked the same question
   The mean number of hours studied was 16 and the standard deviation was 2·2.

   How did the number of hours studied by students from Alloa High School compare with the number of hours studied by students from Alloa Academy ? 2 RE

3. The Mobile Phone Shop is advertising their five latest mobile phones on their website.

   Their prices are:

   £120 £135 £75 £235 £185

   Use an appropriate formula to calculate the mean and standard deviation of these prices.

   (Show all working) 4 KU

4. The price, in pence per litre, of petrol at 10 city garages is shown below:

84.2	84.4	85.1	83.9	81.0
84.2	85.6	85.2	84.9	84.8

   a) Calculate the mean and standard deviation of these prices. 3 KU

   b) In 10 rural garages, the petrol prices had a mean of 88.8 and a standard deviation of 2.4

   How do the rural prices compare with the city prices ? 2 RE

5. Jim typed six pages on his computer using his word processor.

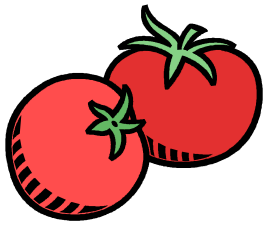
He did a "spell check" and discovered that he had made the following numbers of errors on the 6 pages.

page one - 4 errors
page two - 1 errors
page three - 7 errors
page four - 13 errors
page five - 6 errors
page six - 5 errors

a) Calculate the mean number of errors 1 KU

b) Calculate the standard deviation. 4 KU

6. After trying a new fertilizer on one of his tomato plants, a grower counted the number of tomatoes on each of its six bunches.



The number of tomatoes was:

8, 14, 9, 16, 13, 18

a) Calculate the mean number of tomatoes. 1 KU

b) Construct a table and use it to calculate the standard deviation. 4 KU