Statistics – including probability at Credit.

Will require, standard deviation, scatter graphs, lines of best fit, five figure summaries and Inter-quartile ranges.

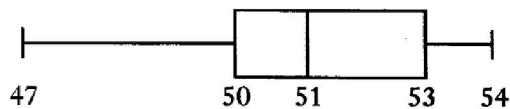**2.** The price, in pence per litre, of petrol at 10 city garages is shown below.

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

(*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

9. **A random check** is carried out on the contents of a number of matchboxes.

A summary of the results is shown in the boxplot below.

47   50   51   53   54

What percentage of matchboxes contains fewer than 50 matches?   1

2. **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

(*b*) Find the standard deviation of the prices.   2

(*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

3. Bottles of juice should contain 50 millilitres.

The contents of 7 bottles are checked in a random sample.

The actual volumes in millilitres are as shown below.

$$52, \quad 50, \quad 51, \quad 49, \quad 52, \quad 53, \quad 50$$

Calculate the mean and standard deviation of the sample.

4

2. The running times in minutes, of 6 television programmes are:

$$77 \quad 91 \quad 84 \quad 71 \quad 79 \quad 75.$$

Calculate the mean and standard deviation of these times.

4

2. (*a*) The pulse rates, in beats per minute, of 6 adults in a hospital waiting area are:

$$68 \quad 73 \quad 86 \quad 72 \quad 82 \quad 78.$$

Calculate the mean and standard deviation of this data.

3

(*b*) 6 children in the same waiting area have a mean pulse rate of 89·6 beats per minute and a standard deviation of 5·4.

Make **two** valid comparisons between the children's pulse rates and those of the adults.

2

3. (*a*) During his lunch hour, Luke records the number of birds that visit his bird-table.

The numbers recorded last week were:

$$28 \quad 32 \quad 14 \quad 19 \quad 18 \quad 26 \quad 31.$$

Find the mean and standard deviation for this data.

4

(*b*) Over the same period, Luke's friend, Erin also recorded the number of birds visiting her bird-table.

Erin's recordings have a mean of 25 and a standard deviation of 5.

Make **two** valid comparisons between the friends' recordings.

2