STATISTICS (Q 7, PAPER 2)

LESSON NO. 4: STANDARD DEVIATION

2006

7   (a)   The mean of the five numbers 2, 4, 7, 8, 9 is 6.
Calculate the standard deviation of the five numbers, correct to one decimal place.

2005

7   (b)   There are fourteen questions in an examination.
The table below shows the performance of the candidates.

Correct responses	0 – 2	3 – 5	6 – 8	9 – 11	12 – 14
Number of candidates	1	2	6	8	3

(i)   Using mid-interval values, calculate the mean number of correct responses.

(ii) Calculate the standard deviation, correct to one decimal place.

2004

7   (a)   The mean of the set of numbers {1, 3, 7, 9} is 5.
Find the standard deviation, correct to one decimal place.

2003

7   (b)   (i)   The mean of the following five numbers is 10. Find the standard deviation of the numbers.
$$7, 9, 10, 11, 13.$$

(ii) The mean of the following five numbers is also 10. Find the standard deviation of these numbers.
$$5, 7, 9, 13, 16.$$

(iii) What does comparing the two standard deviations tell you about the two sets of numbers?

2001

7   (a)   (i)   Calculate the mean of the following numbers
$$2, 3, 5, 7, 8.$$

(ii) Hence, calculate the standard deviation of the numbers correct to one decimal place.

1999

7 (c) The number of minutes taken by 20 pupils to answer a short question is shown in the following distribution table:

Minutes	2 – 4	4 – 6	6 – 8	8 – 10
Number of pupils	6	9	4	1

By taking the data at mid-interval values, calculate
(i) the mean number of minutes taken per pupil

(ii) the standard deviation, correct to one place of decimals.

1998

7 (c) The following table shows the sizes, in hectares, of 20 farms in a particular area:

No. of hectares	15 – 45	45 – 75	75 – 105	105 – 195
Number of farms	1	4	8	7

By taking the data at mid-interval values, calculate
(i) the mean number of hectares per farm

(ii) the standard deviation, correct to the nearest hectare.

1997

7 (b)   {2, 5, 6, 4.5, 2.5}
Show that 4 is the mean of this set of numbers.
Then, calculate the standard deviation, correct to one place of decimals.

ANSWERS
2006 7 (a) 2.6
2005 7 (b) (i) 8.5   (ii) 3.1
2004 7 (a) 3.2
2003 7 (b) (i) 2   (ii) 4
2001 7 (a) (i) 5   (ii) 2.3
1999 7 (c) (i) 5   (ii) 1.7
1998 7 (c) (i) 102   (ii) 38
1997 7 (b) 1.5