

1. A standard die is rolled 36 times. The results are shown in the following table.

Score	1	2	3	4	5	6
Frequency	3	5	4	6	10	8

- (a) Write down the standard deviation.

(2)

- (b) Write down the median score.

(1)

- (c) Find the interquartile range.

(3)

(Total 6 marks)

2. The following frequency distribution of marks has mean 4.5.

Mark	1	2	3	4	5	6	7
Frequency	2	4	6	9	x	9	4

- (a) Find the value of x .

(4)

- (b) Write down the standard deviation.

(2)

(Total 6 marks)

3. A box contains 100 cards. Each card has a number between one and six written on it. The following table shows the frequencies for each number.

Number	1	2	3	4	5	6
Frequency	26	10	20	k	29	11

- (a) Calculate the value of k . (2)
- (b) Find
- (i) the median;
- (ii) the interquartile range.

(5)
(Total 7 marks)

4. There are 50 boxes in a factory. Their weights, w kg, are divided into 5 classes, as shown in the following table.

Class	Weight (kg)	Number of boxes
A	$9.5 \leq w < 18.5$	7
B	$18.5 \leq w < 27.5$	12
C	$27.5 \leq w < 36.5$	13
D	$36.5 \leq w < 45.5$	10
E	$45.5 \leq w < 54.5$	8

- (a) Show that the estimated mean weight of the boxes is 32 kg. (3)
- (b) There are x boxes in the factory marked “Fragile”. They are all in class E. The estimated mean weight of all the other boxes in the factory is 30 kg. Calculate the value of x . (4)
- (c) An additional y boxes, all with a weight in class D, are delivered to the factory. The total estimated mean weight of **all** of the boxes in the factory is less than 33 kg. Find the largest possible value of y .

(5)
(Total 12 marks)