1. The mean of the ten numbers listed below is 5.5.

4, 3, *a*, 8, 7, 3, 9, 5, 8, 3

(a) Find the value of *a*.

(b) Find the median of these numbers.

Working:

Answers:

(a) ……..

(b) ……..

(Total 4 marks)

2. For the set of {8, 4, 2, 10, 2, 5, 9, 12, 2, 6}

(a) calculate the mean;

(b) find the mode;

(c) find the median.

Working:

Answers:

(a) ……..

(b) .....

(c) …….....

(Total 4 marks)

3. In the following ordered data, the mean is 6 and the median is 5.

2, *b*, 3, *a*, 6, 9, 10, 12

Find each of the following

(a) the value of *a*;

(b) the value of *b*.

Working:

Answers:

(a) .....

(b) .....

(Total 8 marks)

4. The weight in kilograms of 12 students in a class are as follows.

63 76 99 65 63 51 52 95 63 71 65 83

(a) State the mode.

(1)

(b) Calculate

(i) the mean weight;

(ii) the standard deviation of the weights.

(2)

When one student leaves the class, the mean weight of the remaining 11 students becomes 70 kg.

(c) Find the weight of the student who left.

(2)

(Total 5 marks)

5. A survey was conducted of the number of bedrooms in 208 randomly chosen houses. The results are shown in the following table.

Number of bedrooms	1	2	3	4	5	6
Number of houses	41	60	52	32	15	8

(a) State whether the data is discrete or continuous.

(1)

(b) Write down the mean number of bedrooms per house.

(2)

(c) Write down the standard deviation of the number of bedrooms per house.

(1)

(d) Find how many houses have a number of bedrooms greater than one standard deviation above the mean.

(2)

Working:

Answers:

(a) .....

(b) .....

(c) .....

(d) .....

(Total 6 marks)

1. (a) $5.5 = \dfrac{4+3+a+8+7+3+9+5+8+3}{10}$ (M1)

$55 = 50 + a$
$5 = a$ (A1) (C2)

(b) 3, 3, 3, 4, 5, 5, 7, 8, 8, 9 (M1)
Median = 5 (A1) (C2)

Note: *Award (M1) for arranging scores in ascending or descending order. Follow through with candidate's a*

[4]

2. (a) Mean = $\frac{60}{10}$
$= 6$ (A1) (C1)

(b) Mode = 2 (A1) (C1)

(c) 2, 2, 2, 4, 5, 6, 8, 9, 10, 12
↑
Median = $\frac{5+6}{2}$ (M1)
$= 5.5$ (A1) (C2)
[4]

3. (a) $\frac{a+6}{2} = 5$ (M1)(A1)
$a + 6 = 10$ (A1)
$a = 4$ (A1) (C4)

(b) $\frac{42+a+b}{8} = 6$ (M1)
$42 + a + b = 48$ (A1)
$a + b = 6$
$4 + b = 6$ (A1)
$b = 2$ (A1)(C4)
[8]

4. (a) 63 kg (A1) 1

(b) (i) 70.5 kg (G1)

(ii) 14.6 kg (also accept 15.2 kg) (G1)2

(c) Total weight of 12 students = 846 kg
Total weight of 11 students = 11 × 70 = 770 kg (M1)

Weight of student who left = 846 – 770 = 76 kg (A1)2

[5]

5. (a) Discrete (A1) (C1)

(b) For attempting to find $\sum fx / \sum f$ (M1)
2.73 (A1)(C2)

(c) 1.34 (A1)(C1)

Notes: *for (b) and (c), if both mean and standard deviation given to 2 significant figures*
Award (C1)(C0)(AP) for 2.7. Award (A1)(ft) for 1.3 ((AP) already deducted)

(d) Attempt to find their mean + their standard deviation (can be implied) (M1)
23, (ft) *their mean and standard deviation.* (A1)(ft)(C2)

[6]