# S1 Edexcel

Sheet #1

Stem and leaf diagram

Question 1: After several months of growth, Kim measures the height in centimetres of each of her plants. Their heights are given below:

$$38, \ 14, \ 22, \ 36, \ 35, \ 29, \ 19, \ 24, \ 32, \ 35, \ 41, \ 47$$

Draw a stem and leaf diagram for Kim's data.

[4 marks]

Question 2: Wallace records how long it takes him to get to work in the morning every day for three weeks. His results have been displayed in the stem and leaf diagram below:

```
0 | 9
1 | 0  2  2  3  5  7  9
2 | 4  7  8
3 | 2  6
4 | 7
5 | 1
```
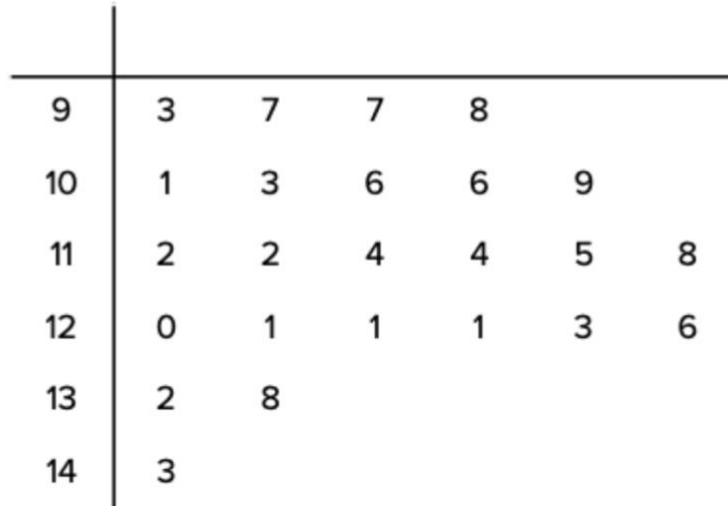
Key: 2 | 4   means 24
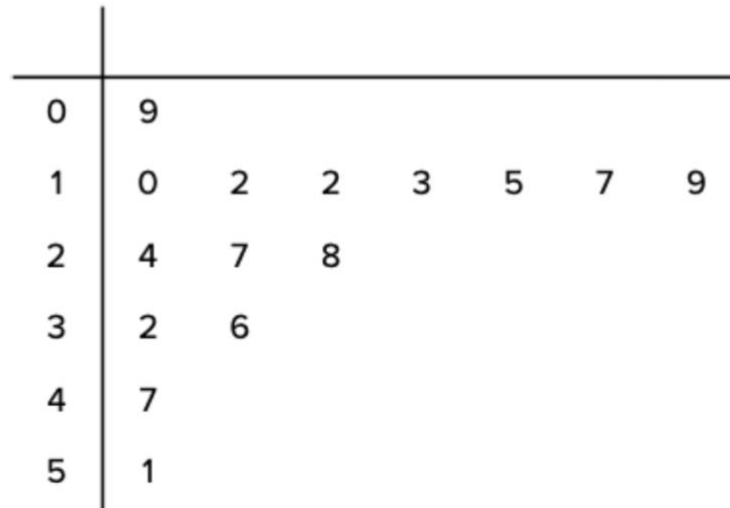
a) Write down the mode.
b) Calculate the range.
c) What percentage of Wallace's journeys are under 20 minutes? Give your answer to 1 decimal place.

[4 marks]

Question 3: A farmer weighs all the calves that his cows have produced. Their weights in pounds are shown in the stem and leaf diagram below:

9	3	7	7	8		
10	1	3	6	6	9	
11	2	2	4	4	5	8
12	0	1	1	1	3	6
13	2	8				
14	3					

Key: 11 | 2 means 112

a) What is the range of the calves' weights?
b) What is the modal calf weight?
c) To the nearest pound, what is the mean calf weight?
d) The farmer forgot to include the weight of his favourite calf, Derek, who has a weight of 156 pounds. If the farmer includes Derek in his data, how will it affect the mean weight?

[5 marks]

Question 4: Jamal is the star player in the school's basketball team. The points he scores in matches are shown in the stem and leaf diagram below:

0	2	4	7			
1	0	4	6	6	7	9
2	2	6	8	9		
3	3	7	9			
4	0					
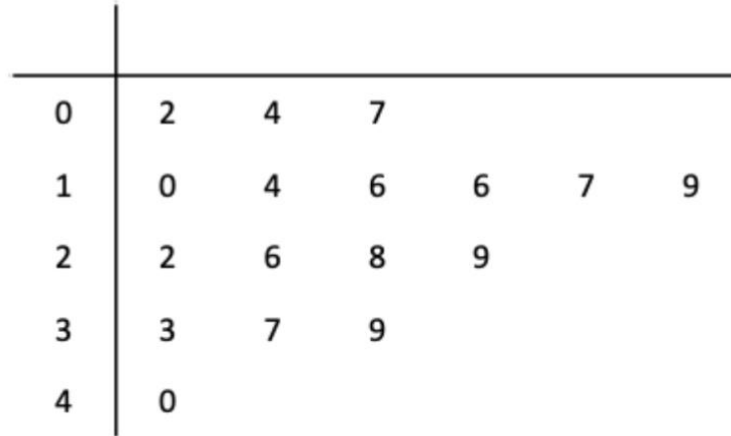
Key: 3 | 3 means 33

a) What is the median number of points scored in a match?
b) In what fraction of the games does Jamal score ten points or less?
c) To the nearest whole number, in what percentage of the matches does Jamal score between 20 and 35 points?

Question 5

The following stem and leaf diagram shows the scores obtained by a group of students in a test.

Score   **Key: 6|1 means 61**

2	1 2 8	(3)
3	3 4 7 8 9	(5)
4	1 2 3 5 6 7 9	(7)
5	0 2 3 3 5 5 6 8 9 9	(10)
6	1 2 2 3 4 4 5 6 6 8 8 8 9 9	(14)
7	0 2 3 4 5 7 8 9	(8)
8	0 1 4	(3)

The modal value is 68, the mean is 57.46 and the standard deviation is 15.7 for these data.

a Find the three quartiles for this data set.

b Calculate the value of $\dfrac{3(\text{mean} - \text{median})}{\text{standard deviation}}$ and comment on the skewness.

c Use two further methods to show that the data are negatively skewed.

Question 6

The following stem and leaf diagram summarises the wing length, to the nearest mm, of a random sample of 67 birds.

Wing length												Key: 5|0 means 50 mm
5	0 0 0 1 1 2 2 3 3 3 4 4											(12)
5	5 5 6 6 6 7 8 8 9 9											(10)
6	0 1 1 1 3 3 4 4 4 4											(10)
6	5 5 6 7 8 9 9											(7)
7	1 1 2 2 3 3											(6)
7	5 7 9 9											(4)
8	1 1 1 2 2 3 3 4											(8)
8	7 8 9											(3)
9	0 1 1 2											(4)
9	5 7 9											(3)

a Write down the mode.

b Find the median and quartiles of the data.

Question 7

Thirty college students were asked how many movies they had in their collection.
The results are as follows:

12	25	34	17	12	18	29	34	45	6	15	9	25	3	29
22	20	32	15	15	19	12	26	27	27	32	35	42	26	25

Draw a stem and leaf diagram to represent these data.

a Find the median.

b Find the lower quartile.

c Find the upper quartile.

Question 8

A class of 16 boys and 13 girls completed a Physics test. The test was marked out of 60.
Their marks are shown below:

	Boys				Girls		
45	54	32	60	26	54	47	32
28	34	54	56	34	34	45	46
32	29	47	48	39	52	24	28
44	45	56	57	33			

a Draw back to back stem and leaf diagrams to represent these data.

b Comment on your results.