STEM AND LEAF DIAGRAMS – PRACTICE QUESTIONS

1.
The stem and leaf diagram below shows the ages of the teachers at a school.

Key: 2 | 3 = 23

2	3 5 7 9
3	3 3 3 4 6 8 9 9
4	0 7 7 8 9
5	0 2 5 6 6 8 9
6	1 4 5

(a) How many teachers work at the school?

27

(b) What is the range of the ages of the teachers at the school?

65 − 23 = 42

(c) How many teachers are less than 35 years old?

8

(d) What is the mode?

33

2.
The stem and leaf diagram below shows the weights of 13 dogs.

Key: 1 | 6 = 16 kilograms

1	6 9
2	2 4 5 9
3	0 0 3 7 8
4	2 5

(a) What is the mode?

30

(b) What is the range of the weights?

45 − 16 = 29

(c) What is the median weight?

30

(d) How many dogs weigh more than 35 kilograms?

4

3.
The stem and leaf diagram below shows the number of goals scored by 20 football teams last season.

Key: 3 | 5 = 35 goals

3	5 8
4	2 5 5 6 7 8
5	1 4 4 4 5 8
6	3 6 9
7	5 7
8	0

(a) What percentage of the teams scored more than 65 goals?

$5/20 \times 100 = 25\%$

(b) What fraction of the teams scored between 40 and 50 goals? Give your answer in its simplest form.

$\frac{6}{20} = \frac{3}{10}$

(c) What is the median number of goals scored?

54

(d) What is the mode?

54

4.
The stem and leaf diagram below shows the number of sweets in 15 packets.

Key: 2 | 8 = 28 sweets

2	8 9
3	0 1 1 2 4 4 4 4 5 6 9
4	1 1 2

(a) If a packet is picked at random, what is the probability that it contains more than 38 sweets?

$\frac{4}{15}$

(b) What is the median number of sweets in a packet?

34

(c) What is the average number of sweets in a packet?

$28+29+30+31+31+32+34+34+34+34+35+36+39+41+41+42$

$= 518$

$518 \div 15 = 34.53$

5.
Below are the number of calls taken by a team in a call centre yesterday.

18 27 33 45 40 29 25 29 36 35 40 39

In the space below, construct a stem and leaf diagram to represent the data.

1	8
2	5 7 9 9
3	3 5 6 9
4	0 0 5

Key:
1 | 8 = 18 calls

6.
Below are the heights of 20 flowers, in centimetres.

25 30 19 42 35 33 37 37 29 26

29 42 38 33 34 33 28 49 32 33

In the space below, construct a stem and leaf diagram to represent the data.

1	9
2	5 6 8 9 9
3	0 2 3 3 3 3 4 5 7 7 8
4	2 2 9

Key:
1 | 9 = 19 centimetres

7.
Below are the percentages that 30 students achieved in a maths test.

88	70	60	49	48	55	56	81	65	61
77	51	52	61	60	56	56	45	35	59
67	66	53	55	71	59	54	44	57	61

In the space below, construct a stem and leaf diagram to represent the data.

3	5
4	4 5 8 9
5	1 2 3 4 5 5 6 6 6 7 9 9
6	0 0 1 1 1 5
7	0 1 7
8	1

key:
3|5 = 35%

8.
Below are the temperatures recorded at 12pm in Bristol in June.

18	23	24	27	22	21	13	17	18	22
27	31	30	32	28	22	26	25	26	20
15	17	18	23	19	26	22	18	21	28

In the space below, construct a stem and leaf diagram to represent the data.

1	3 5 7 7 8 8 8 8 9
2	0 1 1 2 2 2 2 3 3 4 5 6 6 6 7 7 8 8
3	0 1 2

key:
1|3 = 13°C

9.
The stem and leaf diagram below shows the heights, in centimetres, of 20 male students.

Key: 14 | 8 = 148 centimetres

14	8
15	5 8 9
16	1 1 2 4 4 4 6 8 9
17	0 5 6 9
18	1 3 8

(a) Mikey is 165 centimetres tall. What percentage of the male students is taller than Mikey?

$\frac{10}{20} \times 100 = 50\%$

Below are the heights of 18 female students.

136 140 155 150 144 147 169 152 161

139 142 145 149 155 158 160 150 155

(b) In the space below, construct a stem and leaf diagram for the female students.

13	6 9
14	0 2 4 5 7 9
15	0 0 2 5 5 5 8
16	0 1 9

key:
13|6 = 136 centimetres

(c) Compare the range of heights of the female students to the male students.

Male = 188 − 148 = 40 cm
Female = 169 − 136 = 33 cm

The male students have a higher range than the female students.

(d) Compare the median height of the female students to the male students.

Male = 165 cm
Female = 150 cm

The male students have a higher median than the female students.

10.
The stem and leaf diagram below shows the weights, in ounces, of some clementines.

Key: 1 | 8 = 1.8 ounces

1	2 5 5 7 9
2	2 2 3 5 5 5 6 7 9
3	0 1 2 3 7 8 8
4	0 8

Below are the weights, in ounces, of some tangerines.

2.5	3.1	3.5	3.4	3.9	2.7	4.3	2.9	2.9	3.5	4.0
5.1	5.5	6.0	5.6	4.5	4.6	4.7	4.5	4.5	3.9	5.2

(a) In the space below, construct a stem and leaf diagram for the tangerines.

2	5 7 9 9
3	1 4 5 5 9 9
4	0 3 5 5 5 6 7
5	1 2 5 6
6	0

key: 2|5 = 25 ounces

(b) Compare the median weight of the clementines to the tangerines.

Clementines = 2.6 ounces

Tangerines = 4.15 ounces

The tangerines have a higher median weight than the clementines.

(c) Compare the range of the weights of the clementines to the tangerines.

Clementines = 4.8 − 1.2 = 3.6 ounces

Tangerines = 6.0 − 2.5 = 3.5 ounces

The clementines have a higher range than the tangerines.

11.
The stem and leaf diagram shows the scores achieved by 21 players in the first round of a golf tournament.

Key: 6 | 2 = 62

6	2 4 5 8 9
7	0 0 1 2 2 2 2 3 5 5 6 8 9
8	0 5 7
9	1

(a) The par score for the course is 73. How many of the players scored **below** par?

11

(b) What was the median score?

72

(c) What was the range of scores?

91 − 62 = 29

(d) An extra player is added to the tournament. He scores 69 in his first round. Does this change the median or the range that were calculated in parts (b) and (c)?

The range does not change.
The median does not change.

12.
The stem and leaf diagram below shows the number of visitors to a launderette in the first 14 days since opening.

Key: 12 | 2 = 122 visitors

12	2 5 9
13	4 8 8
14	4 6 7 8 9
15	4 7 9

(a) The owners of the launderette set a goal for over 2,000 visitors in the first 14 days. Did they achieve their goal?

122+125+129+134+138+138+144+146+147+148+149
+154+157+159 = 1990 No, they did not achieve their goal.

(b) What was the range of the number of visitors?

159 − 122 = 37

(c) What was the median number of visitors?

145 visitors

(d) On the 15th day, there were 120 visitors to the launderette. Does this change the median or the range that were calculated in parts (b) and (c)?

The range will increase to 39.

The median will decrease to 144.

13.

Below are the throws, in metres, of 22 javelin throwers at an athletics meet.

72.4 71.8 72.0 71.4 73.5 75.0 74.1 77.7 76.8 75.5 75.6

75.0 74.5 76.2 72.2 73.8 74.4 73.9 72.9 76.8 75.7 74.4

(a) In the space below, construct a stem and leaf diagram for the throws.

71	4 8
72	0 2 4 9
73	5 3 9
74	1 4 4 5
75	0 0 5 6 7
76	2 8 8
77	7

key:

71 | 4 = 71.4 metres

(b) Find the range of the throw lengths.

77.7 − 71.4 = 6.3 m

(c) Find the median throw length.

74.4 m

(d) The throw of 77.7 metres was later disqualified because the thrower overstepped. Does this change the median or the range that were calculated in parts (b) and (c)?

The median does not change.

The range will decrease to 5.4 metres.