# Stem and leaf diagrams

1.      Below are the weights, in $kgs$, of 18 adults

| 62 | 58 | 74 | 83 | 66 | 77 | 60 | 88 | 91 |
|----|----|----|----|----|----|----|----|----|
| 71 | 64 | 71 | 97 | 70 | 74 | 89 | 59 | 85 |

Draw a structured stem and diagram

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

Key: 5 | 8 = 58kg

(3 marks)

2.      Below are the scores of 20 students Maths results

| 32 | 27 | 39 | 22 | 16 | 27 | 36 | 28 | 19 | 27 |
|----|----|----|----|----|----|----|----|----|----|
| 31 | 24 | 31 | 37 | 20 | 34 | 28 | 19 | 25 | 33 |

Draw an ordered stem and diagram

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

Key: 1 | 6 = 16

(3 marks)

# Stem and leaf diagrams

3.     Below are the ages, in *years*, of 19 adults

| 32 | 28 | 64 | 53 | 69 | 57 | 34 | 38 | 51 | 42 |
| 62 | 54 | 46 | 77 | 50 | 32 | 59 | 52 | 85 | |

a) Draw a structured stem and diagram

| 2 | 8 | | | | | | |
| 3 | 2 | 2 | 4 | 8 | | | |
| 4 | 2 | 6 | | | | | |
| 5 | 0 | 1 | 2 | 3 | 4 | 7 | 9 |
| 6 | 2 | 4 | 9 | | | | |
| 7 | 7 | | | | | | |
| 8 | 5 | | | | | | |
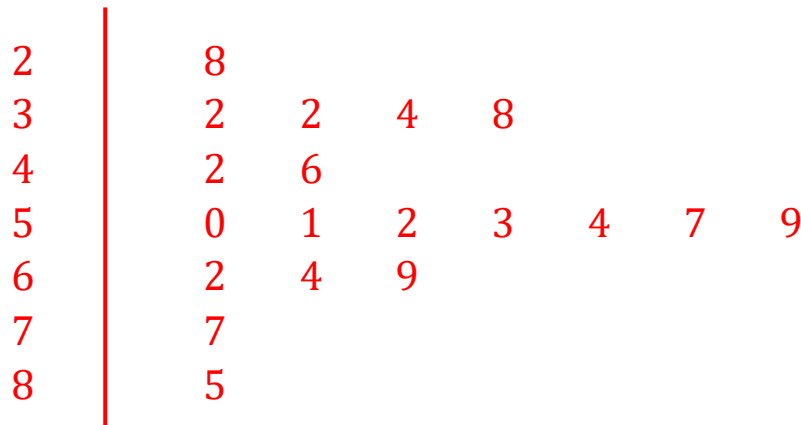
Key: 2 | 8 = 28

b) What is the modal age?

     32

c) What is the range of the ages?

     85-28=57

d) What is the median age?

     $10th\ value = 52$

                                                    (6 marks)

# Stem and leaf diagrams

4.  Below are the heights, in $cm$, of 20 adults

170  172  165  144  166  177  169  138  191  166
171  146  175  197  202  135  189  169  185  193

a) Draw an ordered stem and diagram

| 13 | 5 | 8 |   |   |   |
|----|---|---|---|---|---|
| 14 | 4 | 6 |   |   |   |
| 15 |   |   |   |   |   |
| 16 | 5 | 6 | 6 | 9 | 9 |
| 17 | 0 | 1 | 2 | 5 | 7 |
| 18 | 5 | 9 |   |   |   |
| 19 | 1 | 3 | 7 |   |   |
| 20 | 2 |   |   |   |   |

Key: 13 | 5 $= 135\ cm$

b) What is the modal height?

$166\ cm\ \&\ 169\ cm$

c) What is the median height?

$170.5\ cm$

d) What is the range of the heights?

$202 - 135 = 67\ cm$

(3 marks)

# Stem and leaf diagrams

5. Below is an ordered stem and leaf diagram to show the weights, in grams, of 18 apples

| 09 | 1 | 2 | 5 | 7 | 9 | | |
| 10 | 1 | 1 | 3 | 4 | 7 | 8 | 9 |
| 11 | 0 | 2 | 2 | 4 | 6 | 6 | |

Key: 09 | 1 = 91 grams

a) What is the modal weight of an apple?

$101g$ & $116g$ & $112g$

b) What is the range of the weights of an apple?

$116 - 91 = 24 \ grams$

c) An apple is picked at random, what is the probability it is less than 100 grams?

$$\frac{5}{18}$$

(4 marks)

# Stem and leaf diagrams

6.    Below is an ordered stem and leaf diagram to show the age, in months, of 21 babies

| | |
|---|---|
| 0 | 1   2   2   4   5   5   6   9 |
| 1 | 0   2   *4*   4   6   7   7   9   9<br>9 |
| 2 | 0   1   2   2 |

Key: 0 | 1 = 1 month

d) What is the modal age of the babies?

*19 months*

e) What is the median age of the babies?

*14 months*

f) Another babies, age 14 months, age was added to the data.

Kieran says this will decrease the median.

Is he correct? Explain your answer.

No, the median will stay the same. The median will be 14 months

(4 marks)