1. The stem and leaf diagram shows information about the areas of 32 photographs.

0	8 8 9
1	1 1 3 4 4
2	0 3 5 5 7
3	2 2 3 3 5
4	1 1 3 3 5
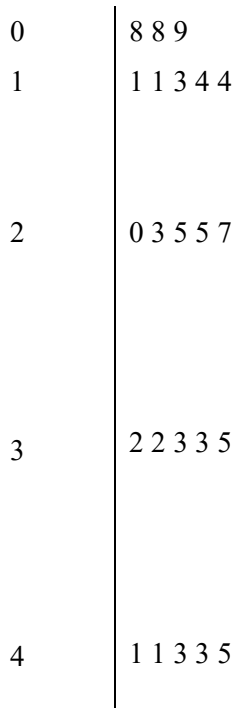
Key: 4 │ represents 41 cm^2

(a) Write down the number of photographs that have an area of 38 cm^2.
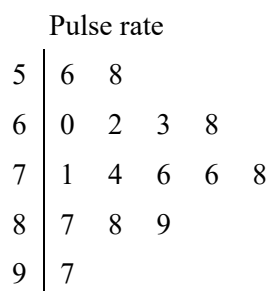
………………………
(1)

(b) Work out the median.

……………………….cm^2
(2)
(Total 3 marks)

2. The stem and leaf diagram shows information about the pulse rate of each of 15 students.

Pulse rate

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

Key:

5 | 6   means 56

(a)   Work out the range of the pulse rates.

....

(1)

(b)   Find the median pulse rate.

....

(1)

(Total 2 marks)

3.   Jane plays some games of ten-pin bowling.

Jane shows her score in each game in a stem and leaf diagram.

7	1	5	5	9
8	0	3	7	
9	2	4	4	8
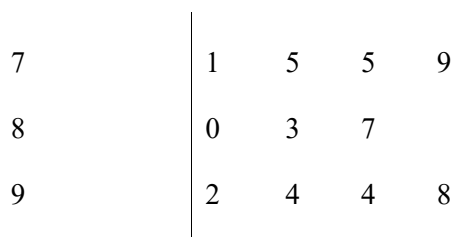
Key: 8
 | 0 =
   80

(a)   Find the range of her scores.

....
                                                                                                            (2)

(b)   Find her median score.

....
                                                                                                            (2)
                                                                                               (Total 4 marks)

01.   (a)   2   1

B1 cao

(b)   28   2

*M1 for identifying the 16ᵗʰ and 17ᵗʰ values or sight of
(32 + 1) ÷ 2 oe*
A1 cao

[3]

02.   (a)   41   1

B1

(b)   74   1

B1

[2]

03.   (a)   98 – 71   2
              = 27

*M1 for 98 – 71 or 71 – 98 or 8 – 1
or 1 – 8 or – 27 or 2 7 seen*
A1 cao

(b)   6ᵗʰ score   2
              = 83

*M1 for 6 seen or an answer of 3 or 8 3
or the 3 may be indicated on the diagram*
A1 cao

[4]

01.   **Specification A**

Foundation Tier

Foundation tier candidates do not seem to understand stem and leaf diagrams. 27% of candidates could interpret a score of 38 from the diagram but only 4% could find the median. A common mistake was to put all the leaves from the diagram in order and find the middle one.

Intermediate Tier

Almost three quarters of candidates answered part (a) correctly but part (b) was answered less well. Many of those who identified the median as 28 also ringed or marked one or both of the 28s on the diagram and some undoubtedly benefited from the 16th and 17th values being the same. It was not uncommon to see an ordered list of all 32 areas written out. Unfortunately some who used this approach ignored the key and only wrote down the leaves from the stem and leaf diagram.

Specification B

Foundation Tier

The stem and leaf diagram has become a regular feature of the modular mathematics papers in past years. This question required the gathering of information from the diagram and almost all candidates were prepared to have a go at obtaining the answers. Over 40% of the candidates provided correct values in part (a) from using the key and writing down the number of photographs with an area of 38 cm². The finding of the median in part (b) was perhaps more demanding although it should only have needed counting values in the table to locate the central value. Around 88% of the candidates failed to identify the two central values or did not know how to use the stem. An incorrect answer of 8 was frequently seen. Other attempts included separate listings of the values in the table.

02.   In previous years the candidate has been asked to construct a stem and leaf diagram but this one required an interpretation of the diagram. Finding the range called for the evaluation of '97 – 56' but locating these values to subtract was not always forthcoming. In part (b) finding the median was seen as being in the 'stem 7' row but homing in on the specific leaf caused some difficulty. Only around 15% of the candidates got either part (or both) correct.

03.   Many candidates were unable to interpret the stem and leaf diagram with '9' being a common incorrect response in (a) from $9 - 0$ and 3 in (b). Other candidates demonstrated that they knew they had to work out the range but wrote '$98 - 79 = 19$' or '$92 - 71 = 21$'. Another common incorrect response in (b) was '4' being the middle number in 01234455789. It was pleasing to note that over 36% of the candidates scored all 4 marks, although nearly 37% scored no marks at all on this question.