Name:

Exam Style Questions

Stem and Leaf Diagrams

Corbettmαths

Equipment needed: Calculator, pen, ruler & pencil

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Videos 169, 170

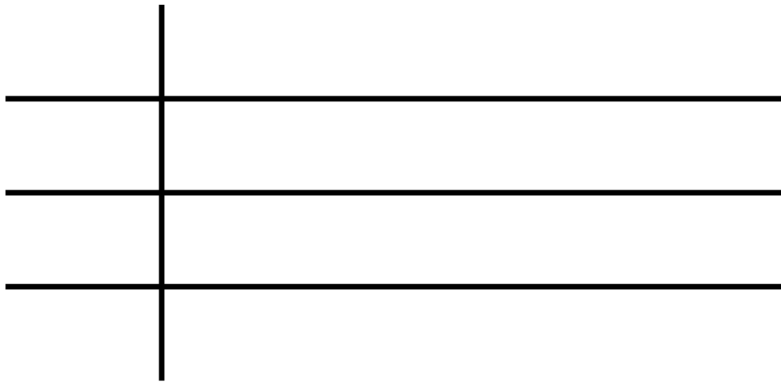Answers and Video Solutions

1. Here are the number of goals scored by 15 hockey teams.

21   30   26   37   34   21   24   45

23   20   15   23   18   13   19

Show this information in a stem and leaf diagram.

Key:

(3)

2. Here are the ages of 14 adults.

| 42 | 35 | 56 | 39 | 40 | 51 | 47 |

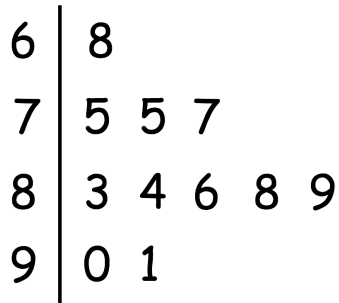| 38 | 42 | 55 | 42 | 48 | 49 | 41 |

Draw an ordered stem and leaf diagram for these ages.

(3)

3. The stem and leaf diagram shows information about the ratings of 11 footballers in a computer game.

Key: 6|8 means 68

```
6 | 8
7 | 5 5 7
8 | 3 4 6 8 9
9 | 0 1
```

(a) How many of the footballers had a rating less than 85?

....

(1)

(b) Write down the mode.

....

(1)

(c) Work out the range of the ratings.

....

(1)

(d) Work out the median rating.

....

(1)

4. Helen plays darts.

Here are her scores.

55   23   48   29   41   47   36

35   40   35   44   34   35

(a) Draw an ordered stem and leaf diagram to show her scores.

(3)

(b) Write down the mode.

....
(1)

(c) Work out the range.

....
(1)

5. Here are the lengths in millimetres of 15 earthworms.

43	19	35	28	21
28	28	18	24	33
31	36	12	41	28

(a) Complete an ordered stem and leaf diagram to show this information.

(3)

(b) How many earthworms are over 40 millimetres?

....
(1)

(c) Write down the mode.

....
(1)

(d) What fraction of the earthworms are under 20 millimetres?

....
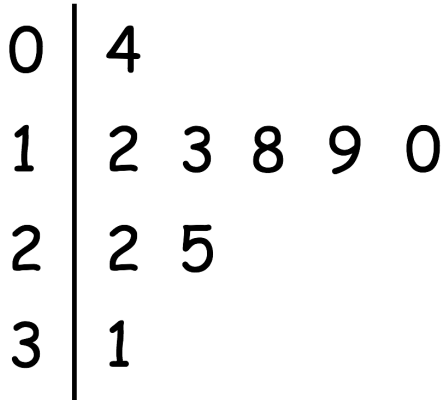**(1)**

6. Kaitlyn asked 10 people how many cups of coffee they had last week. Here are the results.

13   18   4   22   19   10   25   31   13   12

Kaitlyn then drew this ordered stem and leaf diagram.

Key: 0│4 means 4 cups

```
0 │ 4
1 │ 2 3 8 9 0
2 │ 2 5
3 │ 1
```

Give two mistakes that Kaitlyn has made.

Mistake 1

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Mistake 2

……………………………………………………………………………………………………

……………………………………………………………………………………………………

(2)

7. The number of people visiting a cafe each day, for 11 days, is listed below.

104   131   120   115   109   124   128   118   116   120   125

(a) Complete an ordered stem and leaf diagram for this information.
    A key has been included.

Key: 10|4 means 104

(2)

(b) Write down the mode.

....
(1)

(c) Write down the median.

....
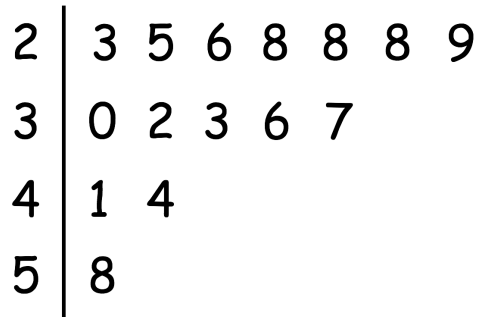**(1)**

(d) Write down the range.

....
(1)

8. The stem and leaf diagram shows information about the time taken by each student to complete a puzzle.

Key: 2│3 means 23 minutes

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

If a student took less than 40 minutes, they win a prize.

One of the students is picked at random.

Thea says that the probability that the student won a prize is $\frac{2}{3}$
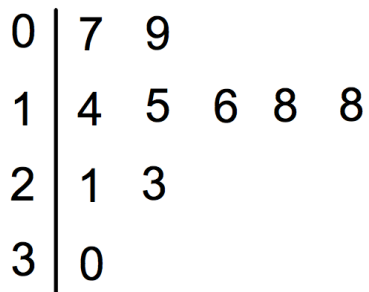
Is Thea correct?
Explain your answer.

....

....

....

(2)

9. The number of passengers on 10 buses was recorded.
The stem and leaf diagram shows this information.

Key: 1|4 means 14 passengers

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

(a) Work out the median.

....
(1)

A bus is selected at random.

(b) What is the probability the bus has more than 20 passengers?

....
(1)

The next bus has 32 passengers.

(c) Tick the box to show how this will effect the range.

The range will decrease

The range will stay the same

The range will increase

☐　　　　☐　　　　☐

(1)

10. 12 of the students in a class sit a test.
The stem and leaf diagram shows their results.

Key: 6│0 means 60%

$$
\begin{array}{c|ccccc}
6 & 0 & 1 & 3 & 5 & 8 \\
7 & 2 & 2 & 6 & 9 \\
8 & 0 & 7 \\
9 & 6 \\
\end{array}
$$

(a) Work out the median score.

....

(1)

A new student joins the class and sits the test.
The new student gets 98% in the test.

(b) Tick the box to show how this will effect the range.

The range will decrease ☐

The range will stay the same ☐

The range will increase ☐

(1)

(c) Tick the box to show how this will effect the median.

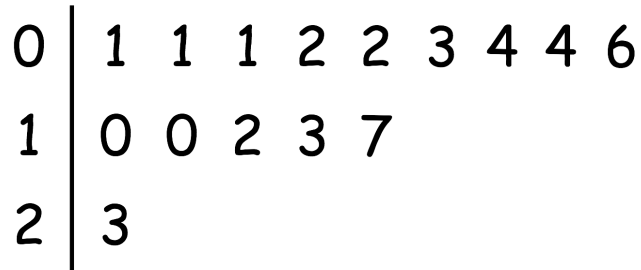The median will decrease ☐

The median will stay the same ☐

The median will increase ☐

(1)

11. Noah places some books on a bookshelf
The stem and leaf diagram shows information about the mass of each book.

Key: 0 | 1 means 0.1kg

```
0 | 1 1 1 2 2 3 4 4 6
1 | 0 0 2 3 7
2 | 3
```

(a) Write down the median.

....
(1)

(b) Work out the total mass of the books on the shelf.

....
(2)

A book weighing 1.8kg is added to the shelf.

Peter says the median will remain the same.

(c) Is Peter correct? Explain your answer.
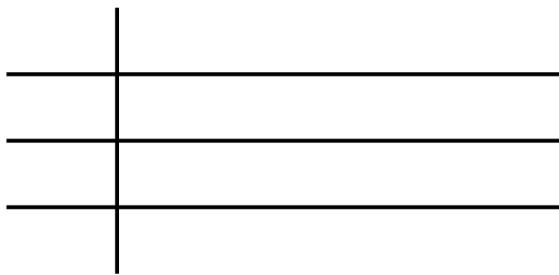
....
(2)

12. Issy bowls 7 cricket balls and measures their speed in miles per hour.
Each of the 7 measurements is to the nearest whole number.

Here is some information about the speeds.

Fastest speed	76 mph
Median	64 mph
Range	27 mph
Mode	68 mph
Mean	61 mph

Complete the stem and leaf diagram.

Key:

(5)