# Dot plots and stem-and-leaf plots: 10 practice questions

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Name: _____ Date: _____

Attempt all questions and show your working. Suggested time: 15 to 20 minutes.

## Section A: Consolidating (Questions 1-4)

### Question 1

The stem-and-leaf plot shows some data. Key: stem 1 and leaf 2 means 12.

| Stem | Leaf |
|---|---|
| 1 | 2 5 8 |
| 2 | 0 3 3 7 |
| 3 | 1 4 |

(a) How many values are shown?

(b) What are the smallest and largest values?

### Question 2

A dot plot shows the number of goals a soccer team scored in each match of its season. The number of dots above each value is shown in the table.

| Goals scored | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Number of dots | 2 | 5 | 4 | 2 | 1 |

(a) How many matches did the team play?

(b) What is the mode?

### Question 3

In a stem-and-leaf plot, one row reads: stem 4, leaves 0  6  9. The key is stem 4 and leaf 0 means 40. Write the three data values.

### Question 4

Draw an ordered stem-and-leaf plot for this data, including a key.

23, 15, 31, 27, 19, 22, 35, 18

## Section B: Standard (Questions 5-10)

**Question 5**

Fifteen students were asked how many siblings they have.

1, 2, 0, 1, 3, 1, 2, 1, 0, 4, 2, 1, 1, 2, 3

(a) Draw a dot plot of the data. (For checking, list how many dots go above each value.)

(b) What is the mode?

**Question 6**

The ages of people at a party are shown. Key: stem 1 and leaf 5 means 15 years.

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

Find the median, mode and range of the ages.

**Question 7**

A dot plot shows quiz scores out of 5.

| Score | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Number of dots | 1 | 4 | 3 | 2 |

(a) Find the mean score.

(b) Find the median score.

**Question 8**

Two dot plots show data on a scale from 1 to 9. The number of dots above each value is given.

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Plot A | 1 | 2 | 3 | 5 | 6 | 5 | 3 | 2 | 1 |
| Plot B | 8 | 6 | 4 | 3 | 2 | 1 | 1 | 0 | 0 |

Describe the shape of each distribution (symmetric, positively skewed or negatively skewed).

**Question 9**

The times, in seconds, for students to solve a puzzle are shown. Key: stem 2 and leaf 4 means 24 seconds.

| Stem | Leaf |
|---|---|
| 2 | 4 6 8 |
| 3 | 0 1 3 5 5 7 |
| 4 | |
| 5 | |
| 6 | 2 |

(a) Which value is an outlier?

(b) Find the range including the outlier.

(c) Find the range without the outlier.

**Question 10**

This back-to-back stem-and-leaf plot shows maths test scores for two classes. Class A's leaves are on the left and are read from the stem outwards, so the leaf 1 next to stem 6 means 61 for Class A. Class B's leaves are on the right, so leaf 2 next to stem 6 means 62 for Class B.

| Class A leaves | Stem | Class B leaves |
|---|---|---|
| | 4 | 8 |
| 5 | 5 | 3 7 |
| 8 4 1 | 6 | 2 5 7 |
| 9 5 2 2 | 7 | 0 4 8 |
| 6 3 | 8 | 1 |

(a) Find the median score for each class.

(b) Find the range for each class.

(c) Which class performed better overall? Give a reason.

# Dot plots and stem-and-leaf plots: answers



**Question 1**

Answer: (a) 9 (b) Smallest 12, largest 34

**Question 2**

Answer: (a) 14 (b) 1 goal

**Question 3**

Answer: 40, 46, 49

**Question 4**

Answer: Key: stem 1 and leaf 5 means 15

| Stem | Leaf |
|---|---|
| 1 | 5 8 9 |
| 2 | 2 3 7 |
| 3 | 1 5 |

**Question 5**

Answer: (a) 0: 2 dots, 1: 6 dots, 2: 4 dots, 3: 2 dots, 4: 1 dot (b) 1

**Question 6**

Answer: Median 24 years (6th value), mode 24 years, range 26 years (41 - 15)

**Question 7**

Answer: (a) 3.6 (36 ÷ 10) (b) 3.5 (5th and 6th values are 3 and 4)

**Question 8**

Answer: Plot A is symmetric. Plot B is positively skewed (most values are low, with a tail towards the higher values).

**Question 9**

Answer: (a) 62 seconds (b) 38 seconds (c) 13 seconds

**Question 10**

Answer: (a) Class A 72, Class B 66 (b) Class A 31, Class B 33 (c) Class A, because its median is higher (and its spread is similar).