Worked answers | Statistics

Dot plots and stem-and-leaf plots

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. List all values shown by the stem plot. [2 marks]

$\text{Leaf unit} = 1$ cm; key $1 \mid 2$ means 12 cm

Stem	Leaves
1	1 2 2 3 5 8
2	0 1 1 4

Read every leaf, including repeated 2s and 1s.

Answer: 11, 12, 12, 13, 15, 18, 20, 21, 21, 24 cm.

2. How many observations are in the stem plot? [2 marks]

$\text{Leaf unit} = 1$ cm; key $1 \mid 2$ means 12 cm

Stem	Leaves
1	1 2 2 3 5 8
2	0 1 1 4

There are 6 leaves in the first row and 4 in the second: $6 + 4 = 10$.

Answer: 10.

3. Construct an ordered stem plot for 14, 18, 18, 21, 23, 25. Include a key. [2 marks]

Ordered stem-and-leaf plot

Stem	Leaves
1	4 8 8
2	1 3 5

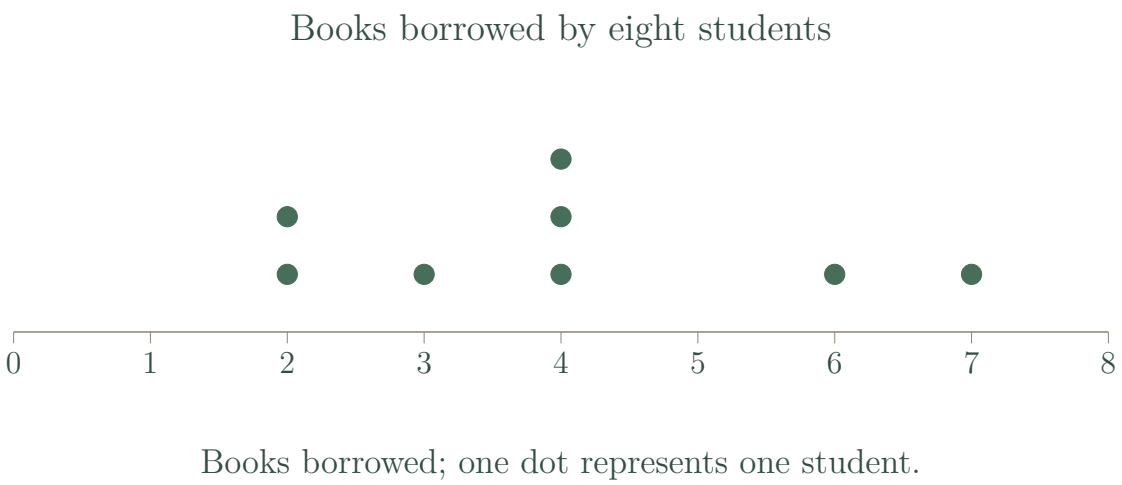
Key: 1 | 4 means 14

Separate tens and ones.

Order the leaves and retain both 18s.

Answer: $1 \mid 4\ 8\ 8$; $2 \mid 1\ 3\ 5$; key $1 \mid 4 = 14$.

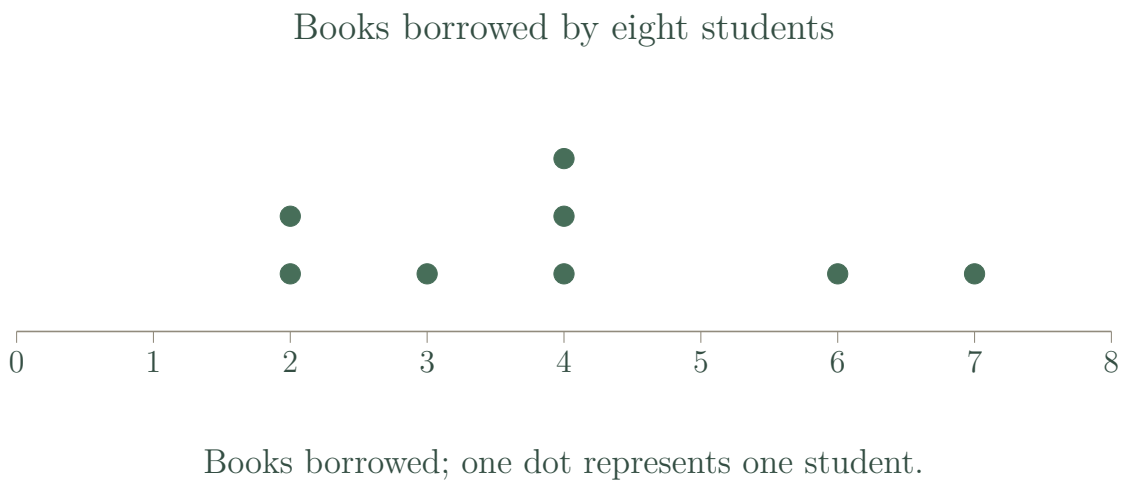
4. State the most frequent value in the dot plot. [2 marks]



Three dots stack above 4, more than above any other value.

Answer: 4 books.

5. How many students in the dot plot borrowed fewer than four books? [2 marks]



The values below 4 are 2, 2 and 3.

Answer: 3 students.

6. A stem plot shows $5 \mid 3$ but gives no key or units. Explain why it is incomplete. [2 marks]

A key and units define the value represented by each stem-leaf combination.

Answer: The reader cannot know whether it means 53, 5.3 or another scale, or what is measured.