

Boxplot Number Hunt

Read the five key values and compare spread.

GRADE 8 • 8.PS.2.e

8.PS.2.e "Identify and describe the lower extreme (minimum), upper extreme (maximum), median, upper quartile, lower quartile, range, and interquartile range given a data set, represented by a boxplot."

NAME _____

DATE _____

READ THE SHAPE

For a horizontal boxplot, read left to right: minimum, lower quartile (Q1), median, upper quartile (Q3), maximum. Range = maximum - minimum. Interquartile range (IQR) = Q3 - Q1.

WORKED EXAMPLE

Boxplot: 3 -- [6 | 9 | 13] -- 17

1. Minimum = 3 and maximum = 17.
2. Q1 = 6, median = 9, and Q3 = 13.
3. Range = $17 - 3 = 14$.
4. IQR = $13 - 6 = 7$.

Answer: Minimum 3, Q1 6, median 9, Q3 13, maximum 17, range 14, IQR 7

PRACTICE 5 problems

- 1** 1. Boxplot: 2 -- [5 | 8 | 12] -- 16. Find the range.

ANSWER _____

- 2** 2. Boxplot: 7 -- [10 | 14 | 21] -- 27. Find the IQR.

ANSWER _____

- 3** 3. Boxplot: 1 -- [4 | 7 | 11] -- 19. List the five-number summary.

ANSWER _____

- 4** 4. Boxplot: 8 -- [10 | 15 | 21] -- 24. State the minimum, median, and maximum.

ANSWER _____

- 5** 5. Boxplot: 0 -- [12 | 18 | 20] -- 30. Find the range and IQR.

ANSWER _____

APPLY IT Show your work

- 1** 1. A robotics team timed how many minutes students took to finish a coding challenge. Their boxplot is 4 -- [11 | 16 | 22] -- 28. Find the range, IQR, and median.

WORK SPACE

ANSWER _____

- 2** 2. A music app made a boxplot of the number of songs students added to playlists: 5 -- [8 | 14 | 18] -- 26. List the five-number summary and the IQR.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Two game-score boxplots are shown. A: 2 -- [10 | 12 | 18] -- 25. B: 4 -- [7 | 15 | 20] -- 23. Which has the larger range? Which has the larger IQR? Explain with subtraction.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	1. Boxplot: 2 -- [5 8 12] -- 16. Find the range.	14
2	2. Boxplot: 7 -- [10 14 21] -- 27. Find the IQR.	11
3	3. Boxplot: 1 -- [4 7 11] -- 19. List the five-number summary.	Minimum 1, Q1 4, median 7, Q3 11, maximum 19
4	4. Boxplot: 8 -- [10 15 21] -- 24. State the minimum, median, and maximum.	Minimum 8, median 15, maximum 24
5	5. Boxplot: 0 -- [12 18 20] -- 30. Find the range and IQR.	Range 30, IQR 8

PART 2 • APPLY IT

1. **Range 24, IQR 11, median 16** Subtract 4 from 28 for the range. Subtract 11 from 22 for the IQR, and read 16 as the median.
2. **Minimum 5, Q1 8, median 14, Q3 18, maximum 26, IQR 10** Read the five values from left to right. Subtract Q1, 8, from Q3, 18, to find the IQR.

CHALLENGE

A has the larger range: $25 - 2 = 23$, while B has $23 - 4 = 19$. B has the larger IQR: $20 - 7 = 13$, while A has $18 - 10 = 8$.

Accept Q1 for lower quartile and Q3 for upper quartile. Accept five-number summaries in left-to-right order or with clear labels.