LESSON MAKER PRO

Middle and Spread

Find the center and spread of data.

GRADE 6 · 6.DSP.A

6.DSP.A "Use real-world and mathematical problems to analyze data and demonstrate an understanding of statistical variability and measures of center."

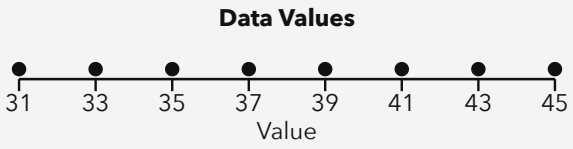
NAME _____ DATE _____

MEDIAN AND IQR

Order the data to find the median, the middle value. If there are two middle values, find their average. Find Q1, the median of the lower half, and Q3, the median of the upper half. Leave out the middle value when dividing an odd-sized data set into halves. The interquartile range, or IQR, is Q3 - Q1.

WORKED EXAMPLE

Find the median and IQR of the data in the dot plot.

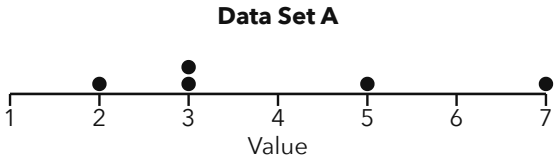


1. The ordered values are 31, 33, 35, 37, 39, 41, 43, 45.
2. Median = (37 + 39) / 2 = 38.
3. Q1 = (33 + 35) / 2 = 34; Q3 = (41 + 43) / 2 = 42.
4. IQR = 42 - 34 = 8.

Answer: Median: 38; IQR: 8

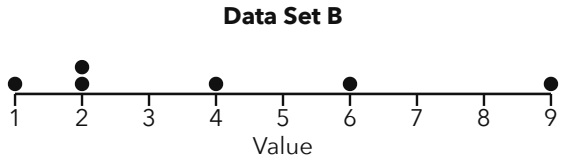
PRACTICE 6 problems

1 Find the median of the data in the dot plot.



ANSWER _____

2 Find the IQR of the data in the dot plot.

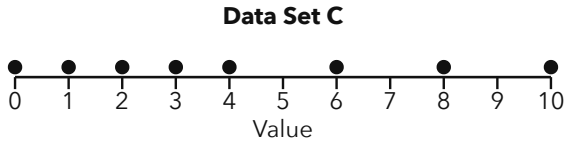


ANSWER _____

3 Find the median of 1, 2, 4, 5, 7, 9.

ANSWER _____

4 Find the IQR of the data in the dot plot.



ANSWER _____

5 Find the median and IQR of 1, 2, 2, 3, 5, 7, 8.

ANSWER _____

6 The table shows two data sets. Which set has the larger IQR, and by how much?

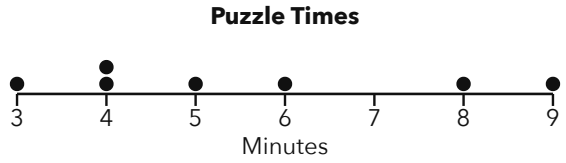
TWO DATA SETS

Set A	Set B
1	0
2	1
2	2
4	4
5	7
6	9

ANSWER _____

APPLY IT Show your work

1 A gaming club recorded how many minutes it took to finish a puzzle in seven rounds. Find the median time and the IQR.



ANSWER _____

2 Ari and Bo each recorded the number of basketball shots they made at six practices. Who was more consistent based on IQR? Give both IQRs.

SHOTS MADE AT EACH PRACTICE

Ari	Bo
2	1
3	2
4	3
4	5
5	8
6	9

ANSWER _____

CHALLENGE One step up

A player's seven game scores were 1, 2, 3, 4, 5, 6, and 7. The last score was recorded incorrectly and should be 10, not 7. Which of the median, IQR, and range (largest minus smallest) changes? Give each measure before and after the correction.

WORK SPACE AND ANSWER

ANSWER KEY

Middle and Spread

GRADE 6 · 6.DSP.A

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the median of the data in the dot plot.	**3**
2	Find the IQR of the data in the dot plot.	**4**
3	Find the median of 1, 2, 4, 5, 7, 9.	**4.5**
4	Find the IQR of the data in the dot plot.	**5.5**
5	Find the median and IQR of 1, 2, 2, 3, 5, 7, 8.	**Median: 3; IQR: 5**
6	The table shows two data sets. Which set has the larger IQR, and by how much?	**Set B, by 3**

PART 2 · APPLY IT

1. **Median: 5 minutes; IQR: 4 minutes** The middle time is 5 minutes. Q1 is 4 minutes and Q3 is 8 minutes, so the IQR is 8 - 4 = 4 minutes.
2. **Ari was more consistent. Ari's IQR is 2 shots; Bo's IQR is 6 shots.** Ari's Q1 and Q3 are 3 and 5; Bo's are 2 and 8. Ari's smaller IQR shows less spread in the middle half of the data.

CHALLENGE

Only the range changes. Before: median 4, IQR 4, range 6. After: median 4, IQR 4, range 9.

Accept equivalent fractions for decimal answers, such as 9/2 for 4.5. For the challenge, students should identify that changing the largest value does not change the median or either quartile.