ALBERT

Name _____ Date _____

Dot Plots, Histograms and Box Plots Worksheet

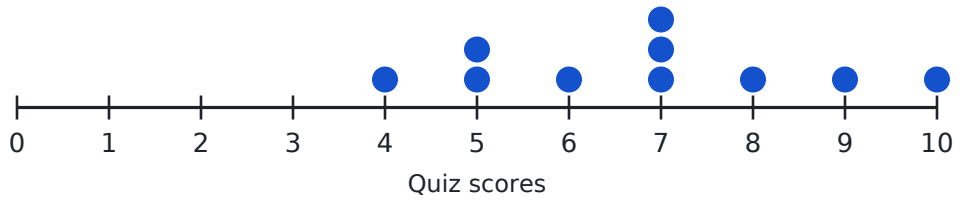
Algebra 1 · Common Core HSS-ID.A.1

> Represent data with plots on the real number line (dot plots, histograms, and box plots).

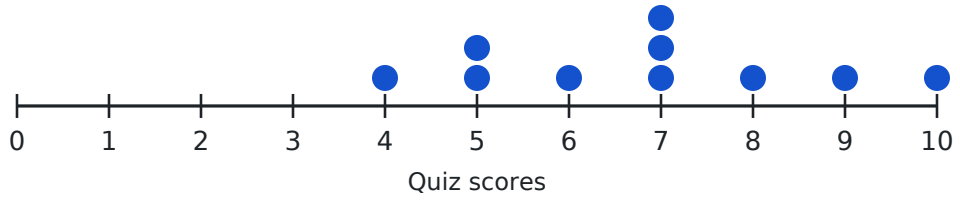
Practice

Builds the skill step by step.

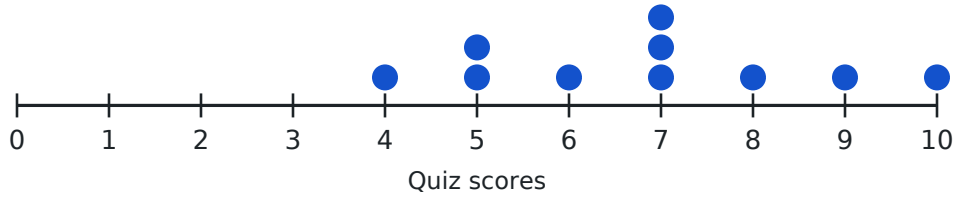
1. The dot plot shows quiz scores. How many students are shown?



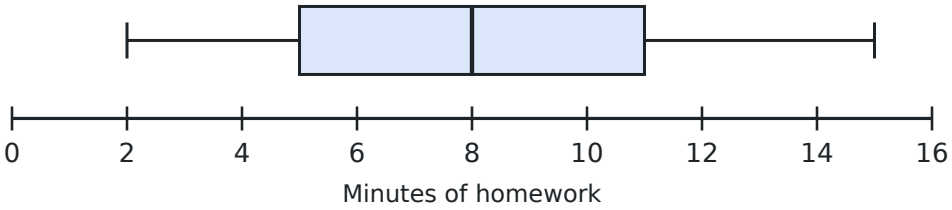
2. In the dot plot, which score is most common?



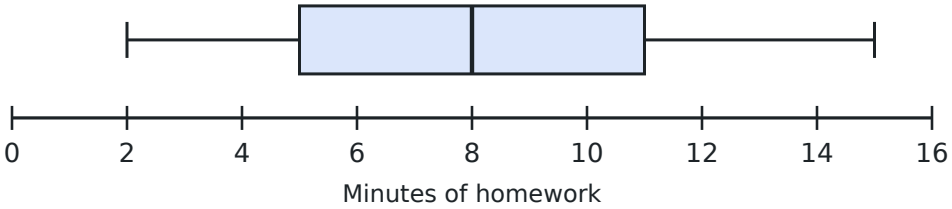
3. What is the median quiz score in the dot plot?



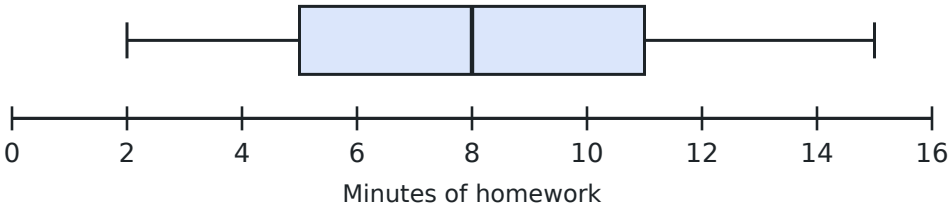
4. What is the median shown by the box plot?



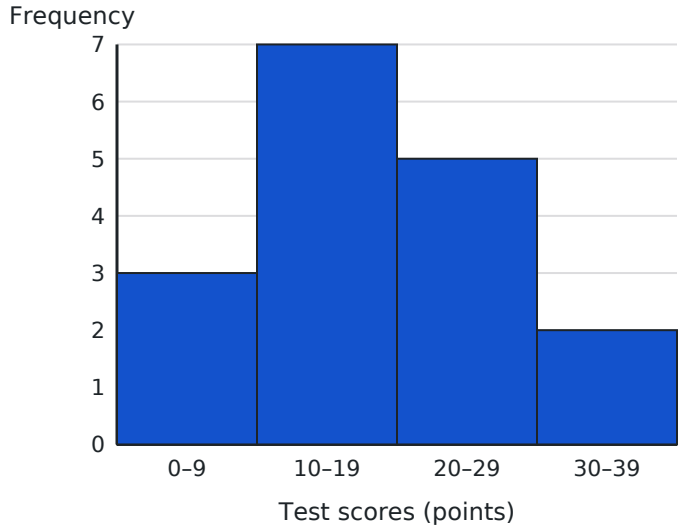
5. What is the interquartile range (IQR) shown by the box plot?



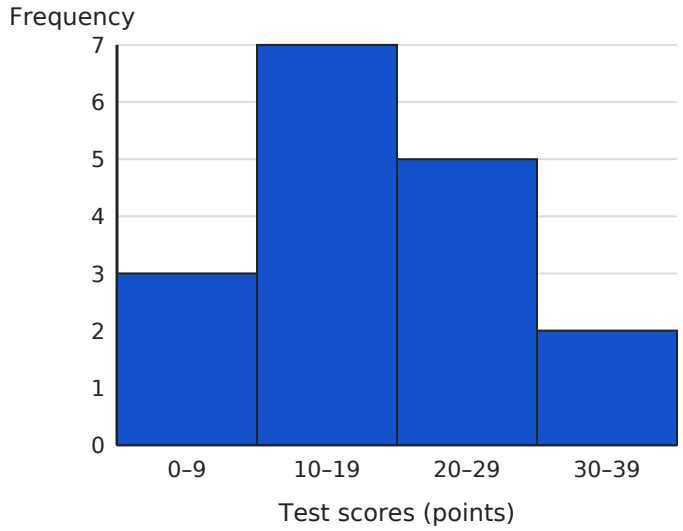
6. What is the range shown by the box plot?



7. How many scores does the histogram show in all?



8. Which bin of the histogram has the most scores?



A. 0–9

B. 20–29

C. 10–19

D. 30–39

9. Which display shows every individual value?

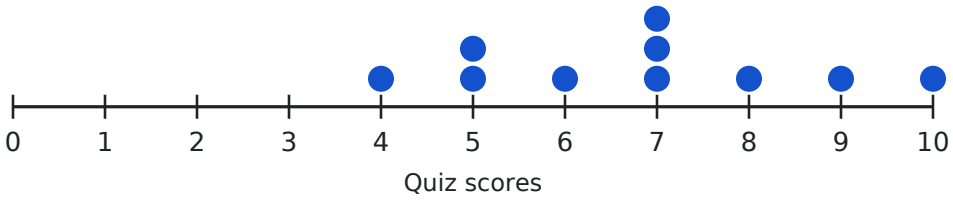
   A. none of them

   B. a dot plot

   C. a box plot

   D. a histogram

10. In the dot plot, how many students scored 8 or more?



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On Level

Grade-level practice.

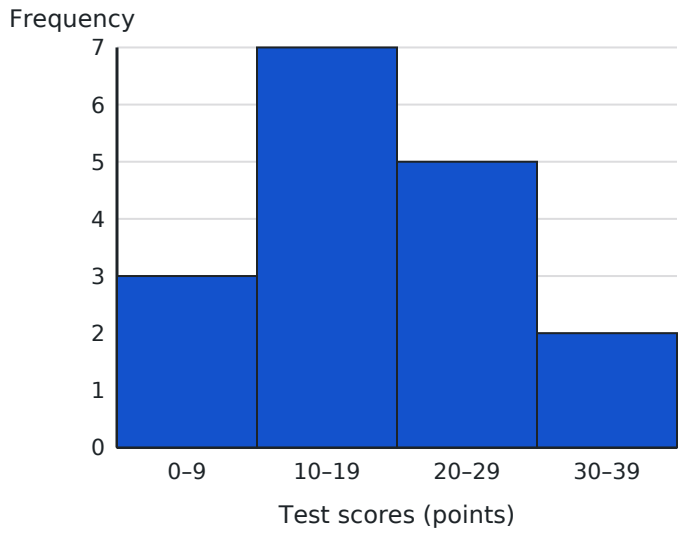
1. Data: 12, 15, 15, 18, 20, 22, 25, 30, 41. What is the median?

2. For 12, 15, 15, 18, 20, 22, 25, 30, 41, what is Q3 (the median of the upper half, not counting the median)?

3. For 12, 15, 15, 18, 20, 22, 25, 30, 41, what is the IQR? (Q1 = 15.)

4. For 12, 15, 15, 18, 20, 22, 25, 30, 41, what is the range?

5. In the histogram, what fraction of the scores are in the 20–29 bin?



6. Explain how to make a box plot from a list of data.

7. A histogram uses the bins 0–9, 10–19, 20–29. Where does the value 20 go?

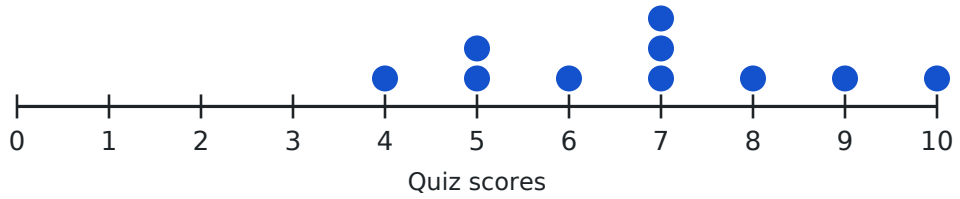
   A. 20–29

   B. 10–19

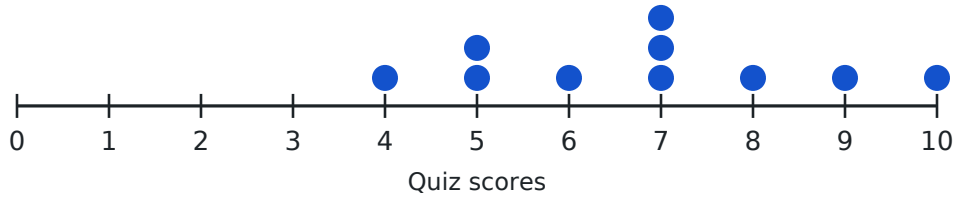
   C. both bins

   D. neither bin

8. For the quiz scores in the dot plot, what is Q1 (the median of the lower five values)?



9. In the dot plot, what percent of the students scored more than 6?



10. Which display is most practical for 500 test scores?

A. a pictograph

B. a list

C. a dot plot

D. a histogram

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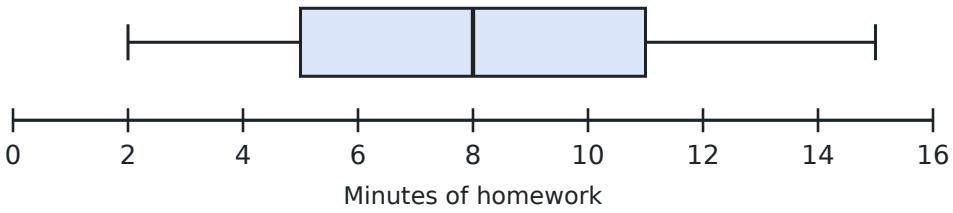
Challenge

Multi-step and word problems that stretch it.

1. A score of 25 is added to the quiz scores (4, 5, 5, 6, 7, 7, 7, 8, 9, 10). What is the new median?

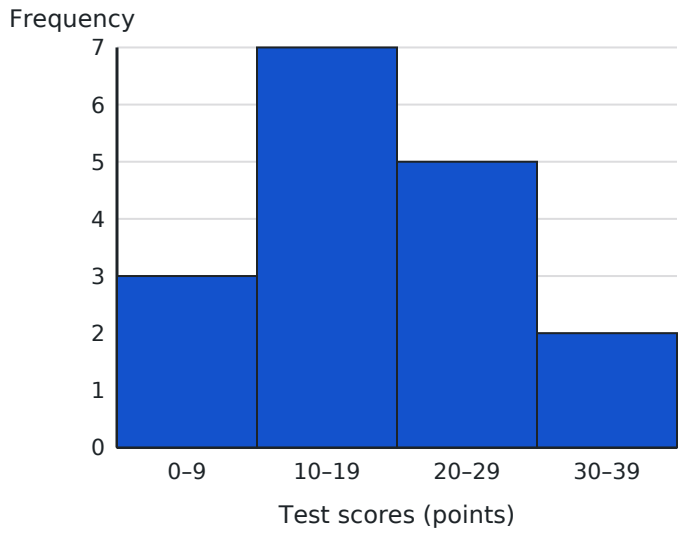
2. After adding 25 to the quiz scores (4, 5, 5, 6, 7, 7, 7, 8, 9, 10), what is the new mean, to the nearest hundredth?

3. In the box plot, 25% of the values are greater than what number?



4. A box plot shows test scores for 40 students. About how many students scored between Q1 and Q3?

5. In the histogram, how many scores are from 10 to 29?



6. Can you find the exact mean of the scores from the histogram alone?

   A. No: it shows only how many values are in each bin.

   B. Yes: add the bins.

   C. Yes: use the middle bin.

   D. Only if there are 4 bins.

7. What is the median of 3, 7, 8, 12, 15, 20?

8. For 12, 15, 15, 18, 20, 22, 25, 30, 41 (Q1 = 15, Q3 = 27.5), values above Q3 + 1.5 × IQR are outliers. What is that cutoff?

9. What information does a box plot NOT show?

   A. the range

   B. the median

   C. the interquartile range

   D. the individual data values

10. How many modes does the data set 2, 3, 3, 5, 5, 8 have?