

Algebra 1 - Data Distributions and Summary Statistics - Worksheet

Common Core S-ID.A.1, S-ID.A.2, S-ID.A.3 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Use these 20 problems to master data distributions and summary statistics (Common Core S-ID.A.1, S-ID.A.2, and S-ID.A.3). You will read dot plots, histograms, and box plots, compute measures of center and spread, test for outliers, and compare distributions in context. They move from quick warm-ups to multistep word problems, so slow down on the last six and check that each answer makes sense.

Algebra 1 · Common Core State Standards: **S-ID.A.1, S-ID.A.2, S-ID.A.3**

Exercise 1 - Mean

Find the mean of 4,8,6,10,12.

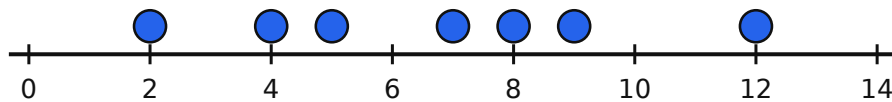
Exercise 2 - Median

Find the median of 7,3,9,1,5 and of 12,15,18,21.

Exercise 3 - Range and mode

Find the range and the mode of 6,9,9,12,14,9,7.

Exercise 4 - Five-number summary



Seven values.

Find the five-number summary of the data in the dot plot.

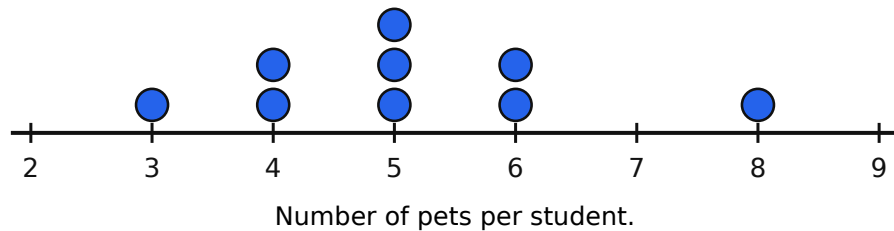
Exercise 5 - Interquartile range

Find the IQR of 3,5,6,8,10,12,15,16.

Exercise 6 - Draw a box plot

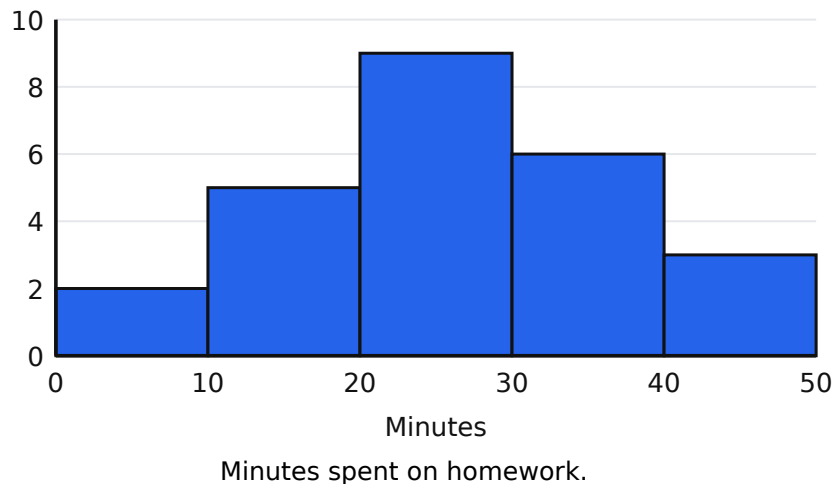
Draw a box plot for minimum 2, Q1 4, median 7, Q3 9, and maximum 12.

Exercise 7 - Read a dot plot



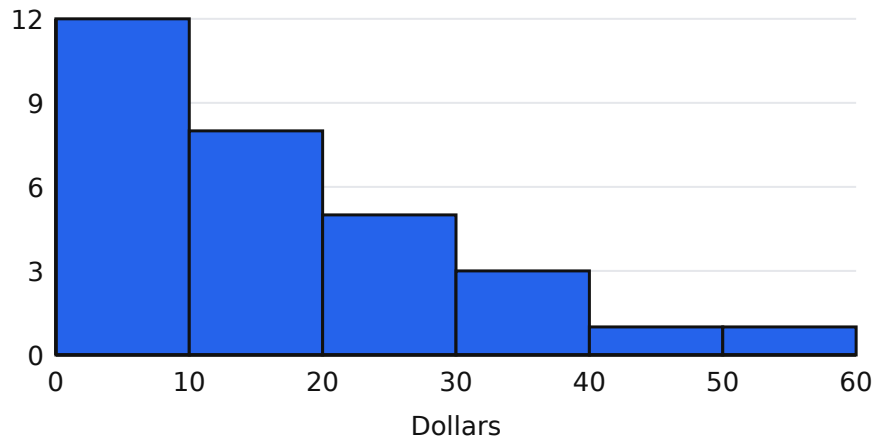
The dot plot shows the number of pets owned by 9 students. Find the median and the mode.

Exercise 8 - Read a histogram



The histogram shows minutes spent on homework by 25 students. How many students spent less than 30 minutes? What percent is that?

Exercise 9 - Shape of a distribution



Money spent at a school store.

The histogram shows dollars spent at a school store. Describe the shape.

Exercise 10 - Test for outliers

Use the $1.5 \cdot \text{IQR}$ rule to decide whether the data 12,14,15,15,16,17,18,45 contain an outlier.

Exercise 11 - Effect of an outlier

For the data 12,14,15,15,16,17,18,45, find the mean and median. Then remove 45 and find them again. Which statistic changes more?

Exercise 12 - Standard deviation

Find the standard deviation of 2,4,4,4,5,5,7,9 (divide by n).

Exercise 13 - Standard deviation with a calculator

Find the standard deviation of 3,5,7,9,11 to the nearest tenth.

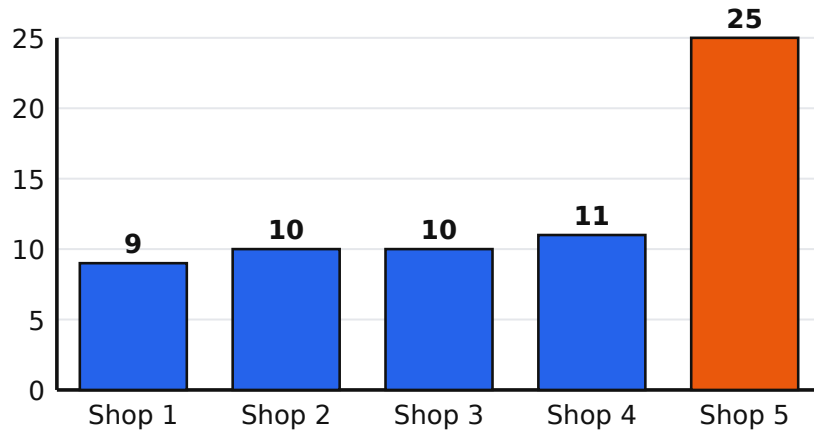
Exercise 14 - Compare two data sets

Team	Scores
A	10, 12, 14, 16, 18
B	6, 10, 14, 18, 22

Scores of two teams.

Team A scores 10,12,14,16,18 and Team B scores 6,10,14,18,22. Compare the means and standard deviations (nearest tenth).

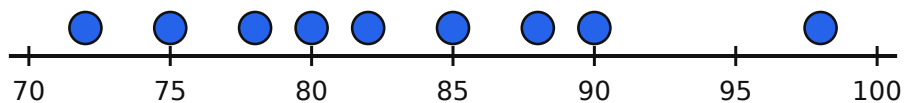
Exercise 15 - Best measure of center



Pizza prices in dollars.

The prices of a pizza at five shops are \$9, \$10, \$10, \$11, and \$25. Find the mean and the median. Which better describes a typical price?

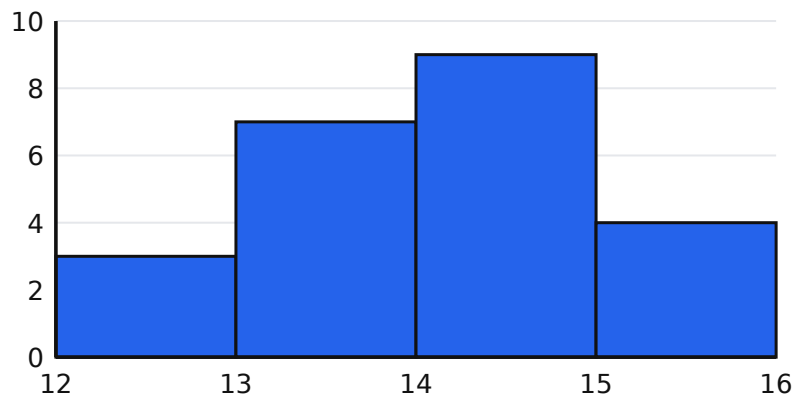
Exercise 16 - Test scores



Nine test scores.

Nine students scored 72, 75, 78, 80, 82, 85, 88, 90, 98. Find the mean (nearest tenth), the median, and the IQR.

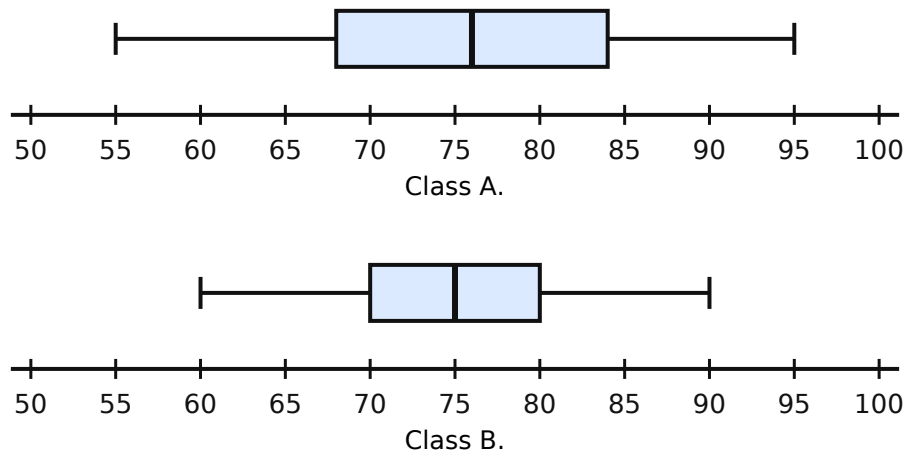
Exercise 17 - Race times



Seconds
Times for 23 runners.

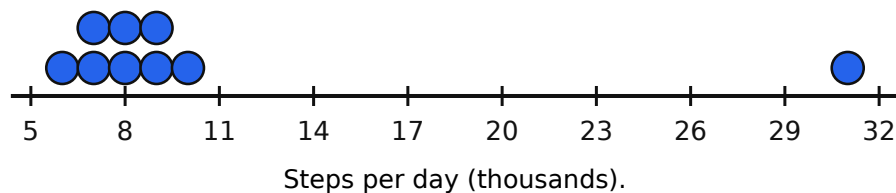
The histogram shows the 100-meter dash times of 23 runners in intervals of 1 second. About what fraction of runners finished in under 14 seconds?

Exercise 18 - Compare box plots



The box plots show the quiz scores for Class A and Class B. Compare the medians, IQRs, and ranges.

Exercise 19 - Daily steps



A student's daily steps (in thousands) for 9 days are 6,7,7,8,8,9,9,10,31. Use the IQR rule to find any outlier, and say which statistics you would report.

Exercise 20 - Change every value

The data 3,5,7,9,11 have mean 7 and standard deviation $\sqrt{8} \approx 2.8$. Find the mean and standard deviation after (a) adding 10 to every value, (b) multiplying every value by 2.