

Algebra 1
Dot Plots, Histograms & Box Plots | Algebra 1 | 3-Topic Bundle

3-topic bundle | 288 problems | Four activity formats

- 01 Dot Plots**
View individual product and its full preview
- 02 Histograms**
View individual product and its full preview
- 03 Box Plots and Outliers**
View individual product and its full preview
-

In every topic

Answer Bank Challenge	24 tasks
Grid Rounds	24 tasks
Match & Move	24 cards
Error Analysis & Strategy	24 tasks
Quick Answer Key and Full Worked Solutions	included
Teacher / Parent Use Guide and Terms of Use	included

Product previews

The following preview pages show the cover, all four activity formats, and worked examples for each included resource, in the listed order.

24 PDFs and 3 READMEs; 557 buyer PDF pages across the 3 products.

Preview pages are not included in the buyer page count. Check the list against resources you already own.

Algebra 1
Dot Plots

Dot Plots | A1-U10-P03
96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
08	Terms of Use & License	included

Topic focus
Across 96 tasks this topic asks for uniform labeled axis, occupied coordinates, exact stack heights, empty ticks, and total dot count, mapped or edited individual coordinates, normalized new stacks, total dots, and unit, qualifying coordinates, contributing stack heights, exact event count, and total count, feature claim, exact coordinate/stack evidence, and interpretation limit, decoded frequencies, ordered observations, total count, and treatment of empty ticks and specific display defect, source-to-dot audit, corrected stacks or axis, and key.
8 PDFs and a README; 207 buyer pages.

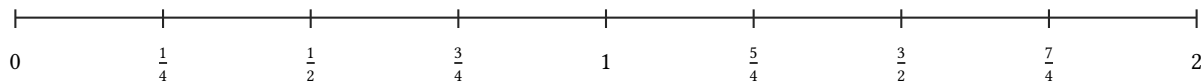
Algebra 1

Dot Plots

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

Quarter-unit data leave several exact empty ticks. Plot one dot for each kilogram observation on a uniform number line from 0 to 2 with tick spacing $\frac{1}{4}$: $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{2}$, $\frac{5}{4}$, $\frac{7}{4}$. Give the exact stack height at every occupied coordinate and retain empty ticks. Do not round quarters to tenths. Match the complete originally requested plot, qualifying-stack/count response, or reconstructed data with its dot key and units. A constructed dot plot must remain a plotted response, not just a count.



Raw observations	$\frac{1}{4}, \frac{1}{2}, \frac{1}{2}, \frac{5}{4}, \frac{7}{4}$	
Axis	Start	0
	End	2
	Tick step	$\frac{1}{4}$
	Ticks	$0, \frac{1}{4}, \frac{1}{2}, \frac{3}{4}, 1, \frac{5}{4}, \frac{3}{2}, \frac{7}{4}, 2$
	Uniform	Yes
Key	one dot represents one observation	
Unit	kilogram	

Bank label: _____

Algebra 1

Dot Plots

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

Consecutive supports have four different stack roles. An exact dot plot on a uniform goal axis from 0 to 3 with step 1 has stacks 0:1 displayed dot, 1:2 displayed dots, 2:4 displayed dots, 3:2 displayed dots; one displayed dot represents 1 observation. Reconstruct the ordered data and a value-frequency table, explicitly accounting for empty ticks. List values in coordinate order.



Axis	Start	0
	End	3
	Tick step	1
	Ticks	0, 1, 2, 3
	Uniform	Yes
Stacks	(Coordinate 0; Displayed dots 1), (Coordinate 1; Displayed dots 2), (Coordinate 2; Displayed dots 4), (Coordinate 3; Displayed dots 2)	
Key	one displayed dot represents 1 observation	
Unit	goal	

Algebra 1

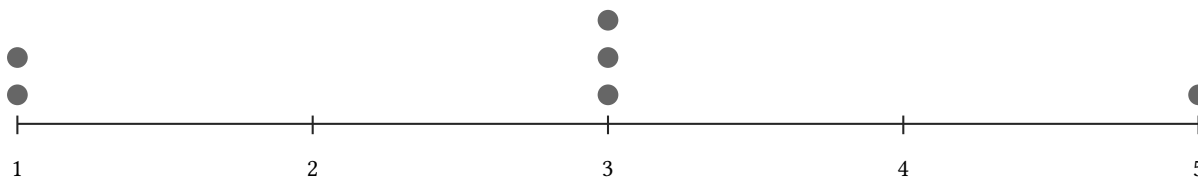
Dot Plots

Name: _____ Date: _____ Class: _____

Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: condition: at most $-\frac{3}{2}$; count: 3; qualifying stacks: (coordinate: $-\frac{5}{2}$; dots: 2), (coordinate: $-\frac{3}{2}$; dots: 1); total: 8; unit: degree

The excluded value has no dot. The exact dot plot uses book coordinates on a uniform axis with step 1; its occupied stacks are 1:2, 3:3, 5:1. How many observations are not equal to 4? State which stacks count and handle endpoint inclusion exactly. Every observed dot remains in the event. Match the complete originally requested plot, qualifying-stack/count response, or reconstructed data with its dot key and units. A constructed dot plot must remain a plotted response, not just a count.



Axis		
	Start	1
	End	5
	Tick step	1
	Ticks	1, 2, 3, 4, 5
	Uniform	Yes
Stacks	(Coordinate 1; Dots 2), (Coordinate 3; Dots 3), (Coordinate 5; Dots 1)	
Key	one dot represents one observation	
Unit	book	
Condition	not equal to 4	

Your response: _____

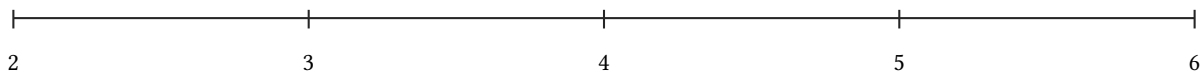
Algebra 1

Dot Plots

Name: _____ Date: _____ Class: _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

Three distinct observations need three separate marks. Plot one dot for each score observation on a uniform number line from 2 to 6 with tick spacing 1: 2, 4, 6. Give the exact stack height at every occupied coordinate and retain empty ticks. Ticks 3 and 5 remain empty. Choose a construction strategy: tally each coordinate frequency before drawing, or place dots in source order and then audit the stacks. Justify the efficient choice for these repetitions, then construct the exact original plot and verify the total.



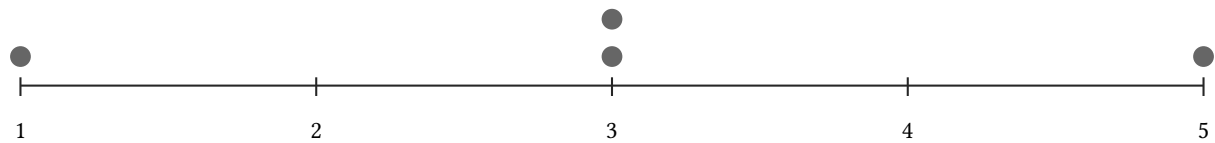
Raw observations	2, 4, 6	
Axis		
	Start	2
	End	6
	Tick step	1
	Ticks	2, 3, 4, 5, 6
	Uniform	Yes
Key	one dot represents one observation	
Unit	score	

Dot Plots

Full Worked Solutions - excerpt

Worked example

Problem. Compare the repeated source value with its stack height. Source evidence: raw ratings 1, 3, 3, 3, 5 Proposed dot display: stacks 1 : 1, 3 : 2, 5 : 1 Diagnose the exact one-to-one, coordinate, key, or axis error and state a corrected display.



Source evidence	raw ratings 1, 3, 3, 3, 5
Proposed display	stacks 1:1, 3:2, 5:1
Declared key	one dot represents one observation
Unit	rating

Answer. correction: use stacks 1 : 1, 3 : 3, 5 : 1 for five total dots.; diagnosis: one repeated observation at coordinate 3 is missing; key: one dot represents one observation; unit: rating

Explanation and check.

Audit: The source contains three copies of 3 but the proposal shows only two. Diagnosis: one repeated observation at coordinate 3 is missing. Correction: use stacks 1 : 1, 3 : 3, 5 : 1 for five total dots.

Algebra 1
Histograms

Histograms | A1-U10-P04
96 problems · Four activity formats

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Topic focus
Across 96 tasks this topic asks for value-to-bin assignments, all bin frequencies, total count, endpoint convention, and unit, feasibility with implied counts, maximum minus minimum frequency, complete possible-count set, diagnosis and repaired intervals and combined exact count.
8 PDFs and a README; 175 buyer pages.

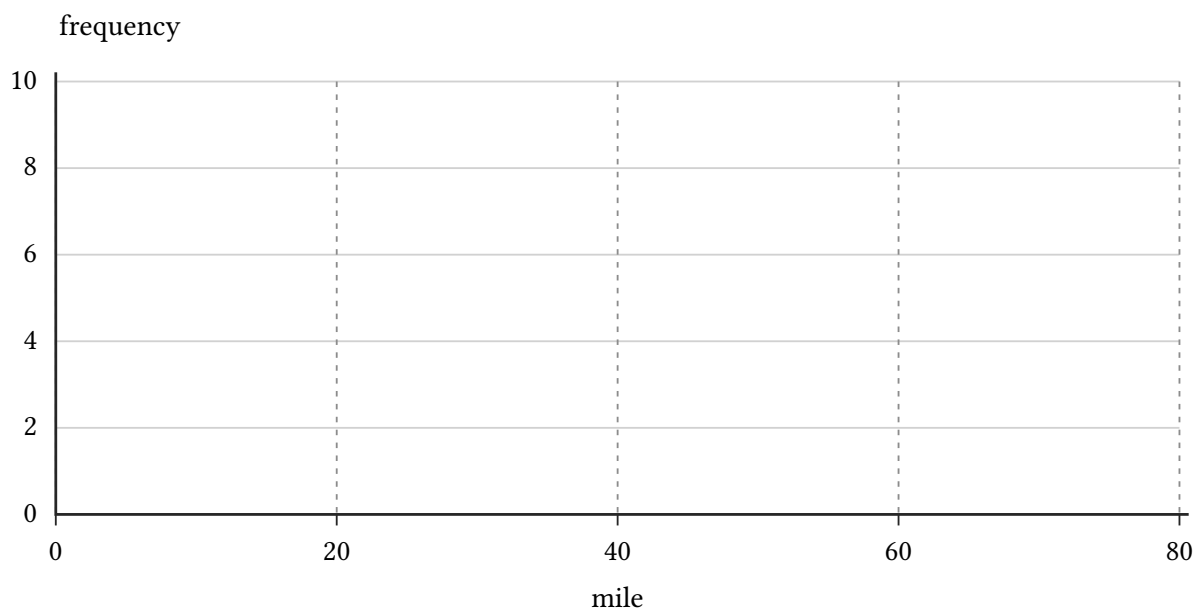
Algebra 1

Histograms

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

A coarse scale uses twenty-unit intervals. Construct a frequency histogram for the exact mile observations 3, 18, 20, 39, 41, 55, 60, 79, 80 using equal-width bin edges 0, 20, 40, 60, 80. Every bin is left-closed/right-open, except the final bin includes its right endpoint. Tally each value once, report every bar height, and retain empty bins. Horizontal width does not change the fact that height is frequency. Match the complete originally requested histogram, count, fraction or density-frequency response. Preserve bar boundaries, the frequency/density distinction, exact endpoint rules and units.



Position	Supplied value
1	3
2	18
3	20
4	39
5	41
6	55
7	60
8	79
9	80

Bank label: _____

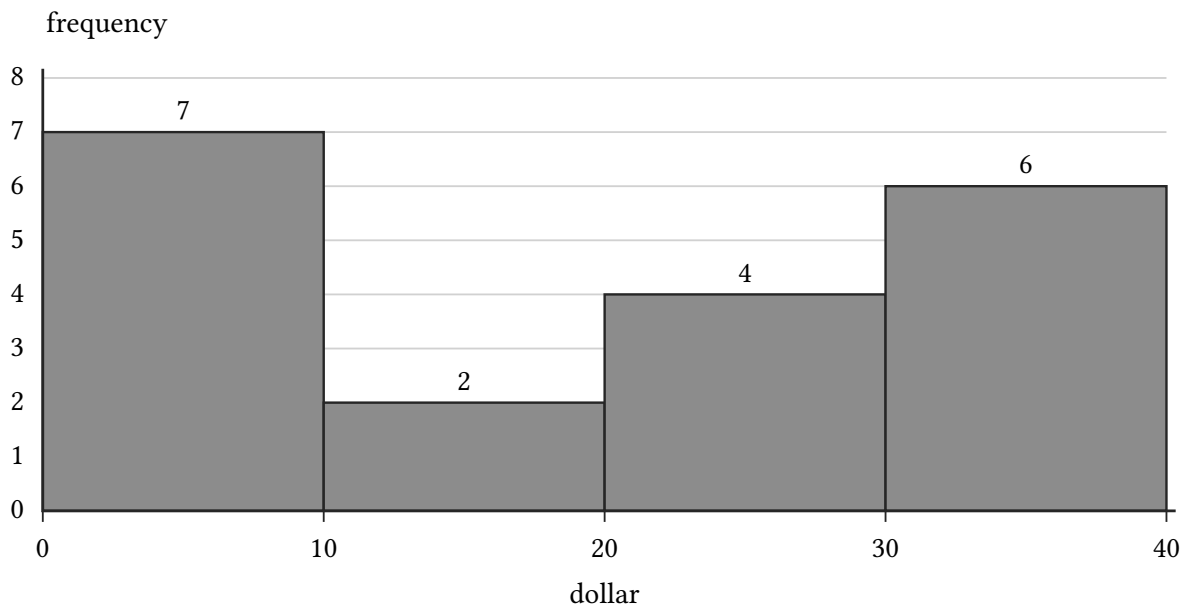
Algebra 1

Histograms

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

The requested set is a union rather than one continuous interval. A frequency histogram has bin edges 0, 10, 20, 30, 40 and bar heights 7, 2, 4, 6 in left-to-right order. Bins are left-closed/right-open, except the final bin includes its right endpoint. Find the count in $[0, 10)$ or $[30, 40]$.



Interval	frequency
$[0, 10)$	7
$[10, 20)$	2
$[20, 30)$	4
$[30, 40]$	6

Algebra 1

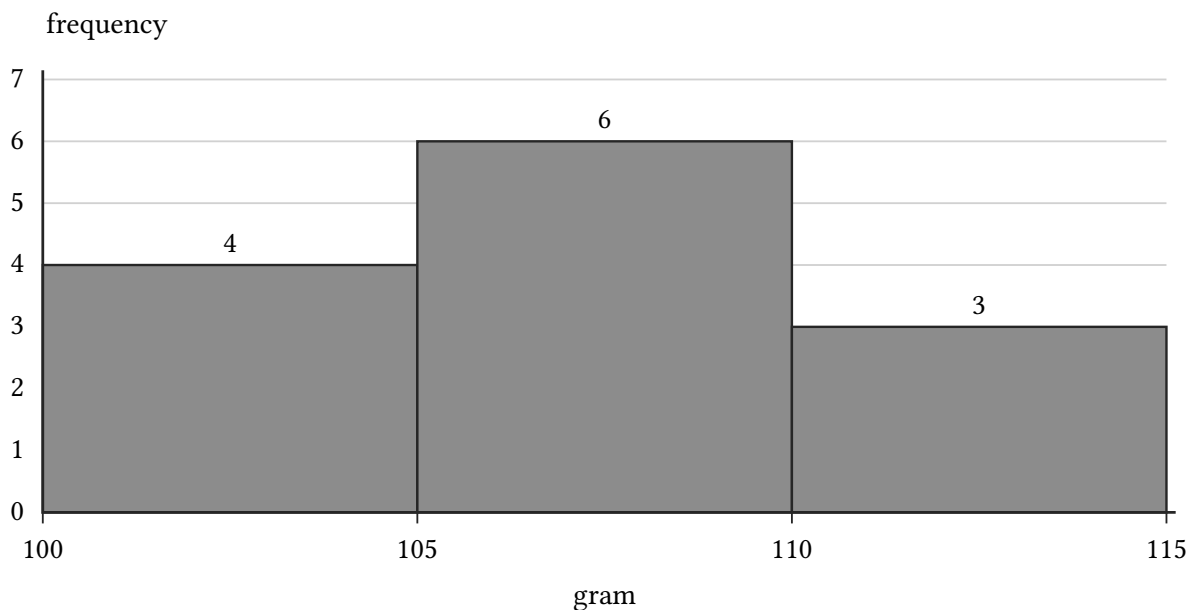
Histograms

Name: _____ Date: _____ Class: _____

Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: Frequency by interval (degree Celsius): $[-2, -1)$: 1; $[-1, 0)$: 2; $[0, 1)$: 2; $[1, 2]$: 3. Total: 8 observations.

Each observation contributes to exactly one bar. A frequency histogram has bin edges 100, 105, 110, 115 and bar heights 4, 6, 3 in left-to-right order. Bins are left-closed/right-open, except the final bin includes its right endpoint. How many observations does the entire histogram represent? Match the complete originally requested histogram, count, fraction or density-frequency response. Preserve bar boundaries, the frequency/density distinction, exact endpoint rules and units.



Interval	frequency
$[100, 105)$	4
$[105, 110)$	6
$[110, 115]$	3

Your response: _____

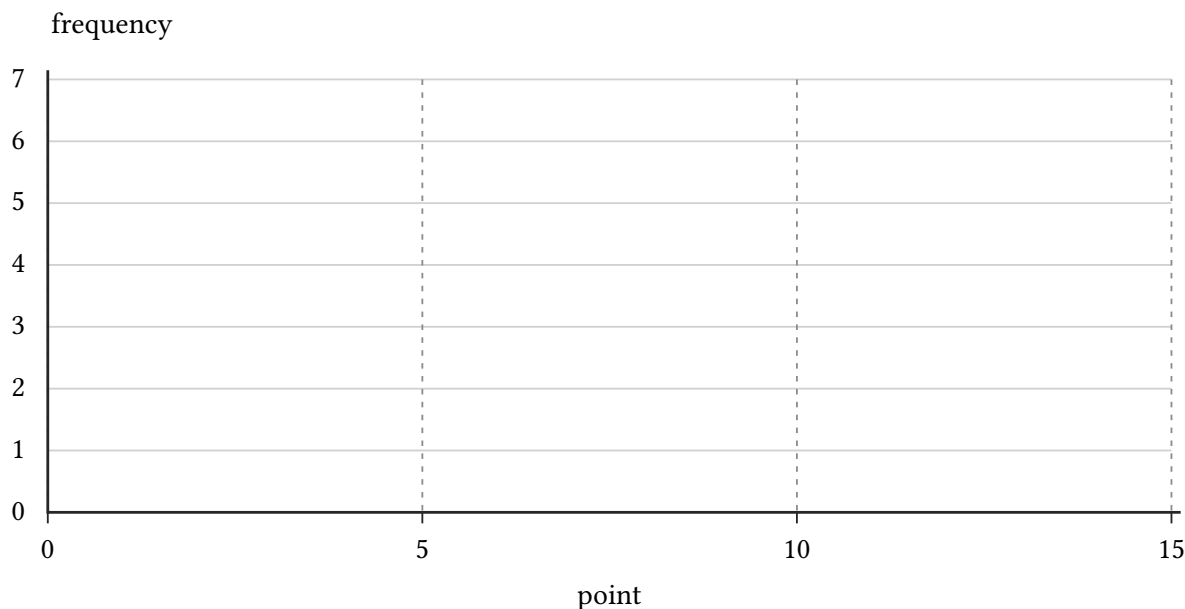
Algebra 1

Histograms

Name: _____ Date: _____ Class: _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

No observation lies on an interior edge. Construct a frequency histogram for the exact point observations 1, 2, 6, 7, 8, 11, 14 using equal-width bin edges 0, 5, 10, 15. Every bin is left-closed/right-open, except the final bin includes its right endpoint. Tally each value once, report every bar height, and retain empty bins. All three bars are occupied. Choose a binning strategy: sort the observations before counting intervals, or tally each observation directly into its bin. Justify the efficient route and use the original edge-inclusion convention to construct the histogram.



Position	Supplied value
1	1
2	2
3	6
4	7
5	8
6	11
7	14

Histograms

Full Worked Solutions - excerpt

Worked example

Problem. In one histogram, a bar contains 9 observations. The corresponding relative-frequency bar has height 0.15. Determine the sample size. Match the complete originally requested histogram, count, fraction or density-frequency response. Preserve bar boundaries, the frequency/density distinction, exact endpoint rules and units.

Answer. 60

Explanation and check.

If $\frac{9}{N} = 0.15$, then $N = \frac{9}{0.15} = 60$.

Worked example

Problem. One bar contains 14 observations. Its relative frequency is exactly $\frac{7}{20}$. Find the total number of observations. Match the complete originally requested histogram, count, fraction or density-frequency response. Preserve bar boundaries, the frequency/density distinction, exact endpoint rules and units.

Answer. 40

Explanation and check.

Solve $\frac{14}{N} = \frac{7}{20}$: $N = 14(\frac{20}{7}) = 40$.

Algebra 1

Box Plots and Outliers

Box Plots and Outliers | A1-U10-P05

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Topic focus

Across 96 tasks this topic asks for iQR, both fences, and each candidate classification, iQR, both fences, and each candidate classification, iQR, both fences, and each candidate classification, iQR, both fences, and each candidate classification, iQR, both fences, and each candidate classification and iQR, both fences, and each candidate classification.

8 PDFs and a README; 175 buyer pages.

Algebra 1

Box Plots
and Outliers

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

One candidate equals the upper fence. For a dataset, $Q1 = 10$ and $Q3 = 20$ points. Under the supplied 1.5-IQR rule, values strictly below the lower fence or strictly above the upper fence are outliers. Classify the candidate observations 5, 10, 20, 35, 36. Fence equality remains included.

$q1$	10
$q3$	20
Candidate values	5, 10, 20, 35, 36
Unit	points
Rule	strictly outside $Q1 - 1.5 \cdot IQR$ and $Q3 + 1.5 \cdot IQR$

Bank label: _____

Only the farthest upper candidate crosses its fence. For a dataset, $Q1 = 2$ and $Q3 = 6$ scores. Under the supplied 1.5-IQR rule, values strictly below the lower fence or strictly above the upper fence are outliers. Classify the candidate observations 0, 6, 12, 13. Do not compare values merely with $Q3$.

$q1$	2
$q3$	6
Candidate values	0, 6, 12, 13
Unit	scores
Rule	strictly outside $Q1 - 1.5 \cdot IQR$ and $Q3 + 1.5 \cdot IQR$

Bank label: _____

Candidates straddle both exact cutoff values. For a dataset, $Q1 = 4$ and $Q3 = 8$ units. Under the supplied 1.5-IQR rule, values strictly below the lower fence or strictly above the upper fence are outliers. Classify the candidate observations $-2, -3, 14, 15$. Apply the strict signs separately on the two sides.

$q1$	4
$q3$	8
Candidate values	$-2, -3, 14, 15$
Unit	units
Rule	strictly outside $Q1 - 1.5 \cdot IQR$ and $Q3 + 1.5 \cdot IQR$

Bank label: _____

The low candidates lie on opposite sides of the cutoff. For a dataset, $Q1 = 5$ and $Q3 = 9$ minutes. Under the supplied 1.5-IQR rule, values strictly below the lower fence or strictly above the upper fence are outliers. Classify the candidate observations $-2, -1, 5, 9$. Use the computed lower fence rather than the minimum.

$q1$	5
$q3$	9
Candidate values	$-2, -1, 5, 9$
Unit	minutes
Rule	strictly outside $Q1 - 1.5 \cdot IQR$ and $Q3 + 1.5 \cdot IQR$

Bank label: _____

Algebra 1

Box Plots
and Outliers

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

Both quartiles coincide. For a dataset, $Q1 = 5$ and $Q3 = 5$ ratings. Under the supplied 1.5-IQR rule, values strictly below the lower fence or strictly above the upper fence are outliers. Classify the candidate observations 4, 5, 6, 5. With IQR zero, both fences equal 5.

$q1$	5
$q3$	5
Candidate values	4, 5, 6, 5
Unit	ratings
Rule	strictly outside $Q1 - 1.5 \cdot \text{IQR}$ and $Q3 + 1.5 \cdot \text{IQR}$

Algebra 1

Box Plots
and Outliers

Name: _____ Date: _____ Class: _____

Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: lower fence: -24 ; lower whisker: -18 ; outlier marks: ; upper fence: 20 ; upper whisker: 5

A signed dataset has no separated extremes. The ordered-source net-points data are $-6, -4, -2, 0, 2, 4, 6, 8$. Use median-of-halves quartiles and the modified-box rule: strict 1.5-IQR outliers are marked separately, while each whisker ends at the most extreme observed nonoutlier. Determine both whisker endpoints and every outlier mark. Preserve the negative lower coordinate.



Raw data	$-6, -4, -2, 0, 2, 4, 6, 8$
Unit	net-points
Quartile convention	median of halves; exclude overall median for odd n
Outlier rule	strictly outside 1.5-IQR fences

Your response: _____

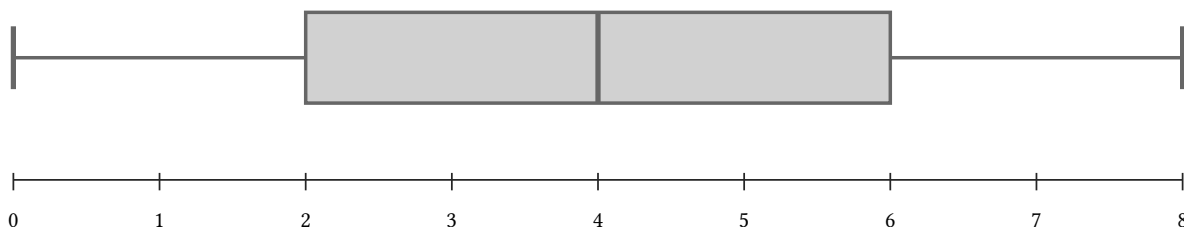
Algebra 1

Box Plots
and Outliers

Name: _____ Date: _____ Class: _____

Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

The summary need not identify one sample. Use the median-of-halves convention, excluding the overall median for odd n . The required five-number summary is (0, 2, 4, 6, 8) in minimum/ $Q1$ /median/ $Q3$ /maximum order. Use 7 integer observations in each list. Give two different compatible samples. Before calculating or constructing, choose how to test compatibility: translate the summary into ordered-position constraints and use the additional stated restrictions, or use only a proposed total/mean. Explain which information your method must check, then carry out the original construction or impossibility proof.



Lower whisker	Q1	Median	Q3	Upper whisker	Outlier marks
0	2	4	6	8	none

Five number summary	0, 2, 4, 6, 8
Quartile convention	median of halves; exclude overall median for odd n
Conditions	Use 7 integer observations in each list.

Box Plots and Outliers

Full Worked Solutions - excerpt

Worked example

Problem. The low candidates lie on opposite sides of the cutoff. For a dataset, $Q1 = 5$ and $Q3 = 9$ minutes. Under the supplied $1.5 \cdot \text{IQR}$ rule, values strictly below the lower fence or strictly above the upper fence are outliers. Classify the candidate observations $-2, -1, 5, 9$. Use the computed lower fence rather than the minimum.

$q1$	5
$q3$	9
Candidate values	$-2, -1, 5, 9$
Unit	minutes
Rule	strictly outside $Q1 - 1.5 \cdot \text{IQR}$ and $Q3 + 1.5 \cdot \text{IQR}$

Answer. classifications: (classification: low outlier; value: -2), (classification: not an outlier; value: -1), (classification: not an outlier; value: 5), (classification: not an outlier; value: 9); iqr: 4 ; lower fence: -1 ; upper fence: 15

Explanation and check.

$\text{IQR} = 4$. The lower fence is

$$5 - 1.5(4) = -1$$

and the upper fence is

$$9 + 1.5(4) = 15$$

-2 is low outlier; -1 is not an outlier; 5 is not an outlier; 9 is not an outlier. Only -2 is strictly below the lower fence -1 .

Worked example

Problem. Candidates straddle both exact cutoff values. For a dataset, $Q1 = 4$ and $Q3 = 8$ units. Under the supplied $1.5 \cdot \text{IQR}$ rule, values strictly below the lower fence or strictly above the upper fence are outliers. Classify the candidate observations $-2, -3, 14, 15$. Apply the strict signs separately on the two sides.

$q1$	4
$q3$	8
Candidate values	$-2, -3, 14, 15$
Unit	units
Rule	strictly outside $Q1 - 1.5 \cdot \text{IQR}$ and $Q3 + 1.5 \cdot \text{IQR}$

Answer. classifications: (classification: not an outlier; value: -2), (classification: low outlier; value: -3), (classification: not an outlier; value: 14), (classification: high outlier; value: 15); iqr: 4 ; lower fence: -2 ; upper fence: 14

Explanation and check.

$\text{IQR} = 4$. The lower fence is

$$4 - 1.5(4) = -2$$

and the upper fence is

$$8 + 1.5(4) = 14$$

-2 is not an outlier; -3 is low outlier; 14 is not an outlier; 15 is high outlier. The equality cases -2 and 14 are nonoutliers.