Sets & Steps
Math Practice & Worked Solutions

Algebra 1

Scatter Plots and Bivariate Data

Scatter Plots and Bivariate Data | A1-U10-P07

96 problems · Four activity formats

Topic focus

Across 96 tasks this topic asks for removed/added coordinates and updated ordered-pair multiset, axis assignment, labeled bounds/ticks, and role justification, axis labels and complete plotted ordered-pair multiset, qualifying complete ordered pairs and interpretation, missing coordinate or pair, with uniqueness/ambiguity justification and error diagnosis, exact removals/additions, and corrected multiset.

8 PDFs and a README; 188 buyer pages.

The following pages use the same questions, given data, and notation as the final files. Question/card serial numbers and internal IDs are omitted in this preview only. Table values and matching responses are retained. Full answer keys are not included.

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Algebra 1

Scatter Plots and Bivariate Data

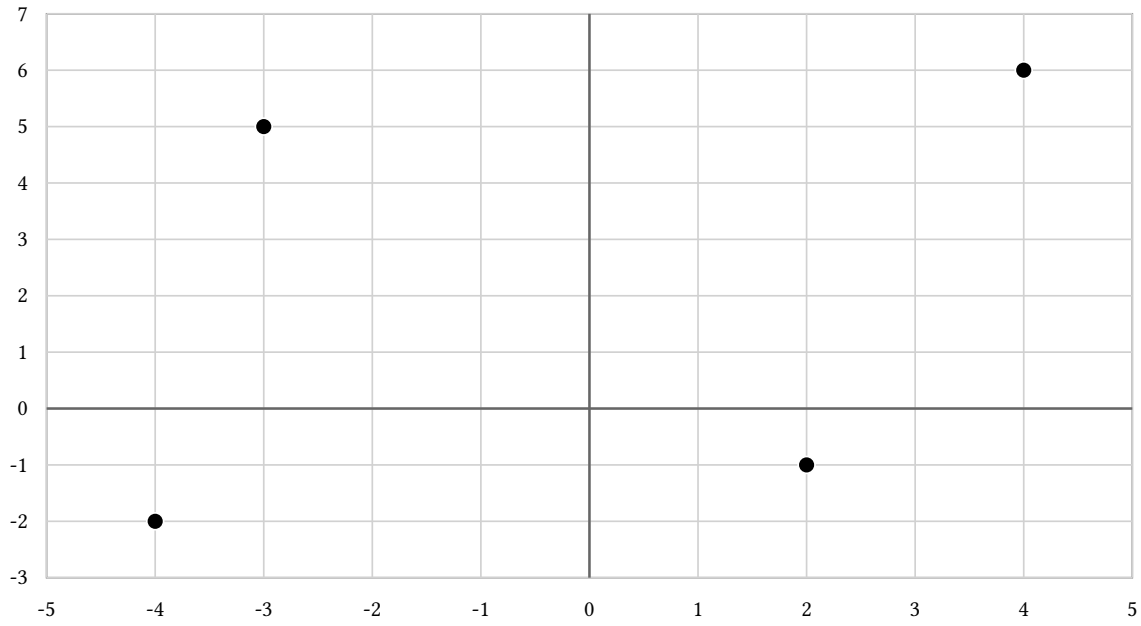
Name: _____ **Date:** _____ **Class:** _____

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

An exact scatter plot contains the points $(-4, -2)$; $(-3, 5)$; $(2, -1)$; $(4, 6)$. The horizontal axis is x change (units); the vertical axis is y change (units). Find the record with both coordinates negative. Return complete ordered pairs with units and preserve any stated multiplicity.

Given scatter plot

Vertical axis: y change (units)



Bank label: _____

Algebra 1

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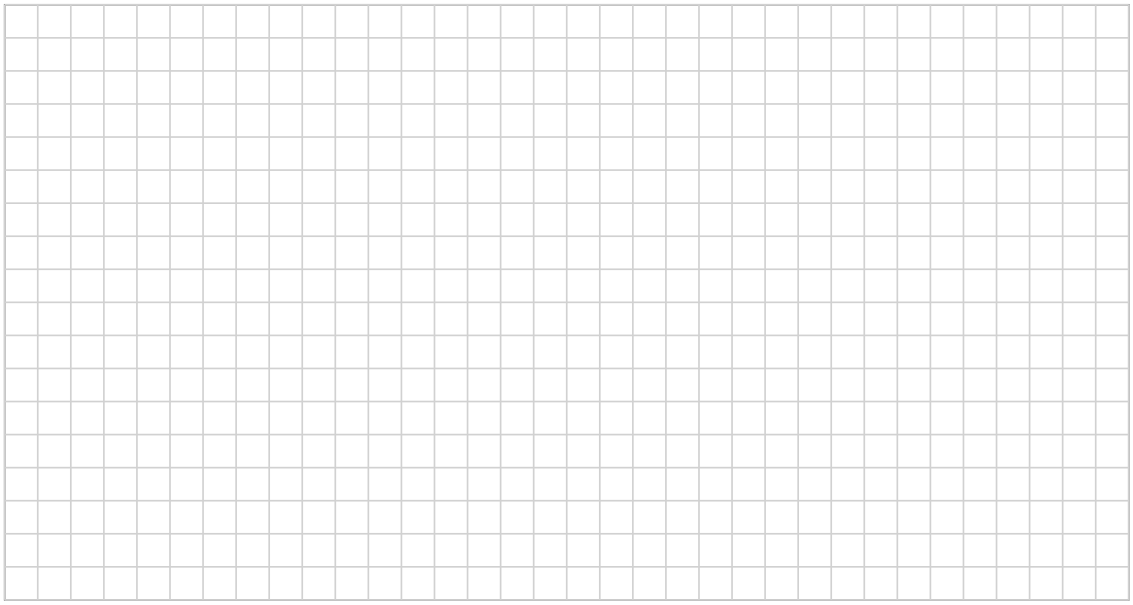
Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

Three seedlings are measured. The paired table records age (days) and height (*cm*): A: $(1, 3)$, B: $(2, 5)$, C: $(3, 8)$. Put age on the horizontal axis and height on the vertical axis. Plot all three records and list the ordered pairs used.



Choose and label axes, bounds and uniform tick intervals.

Record	age (days)	height (cm)
A	1	3
B	2	5
C	3	8

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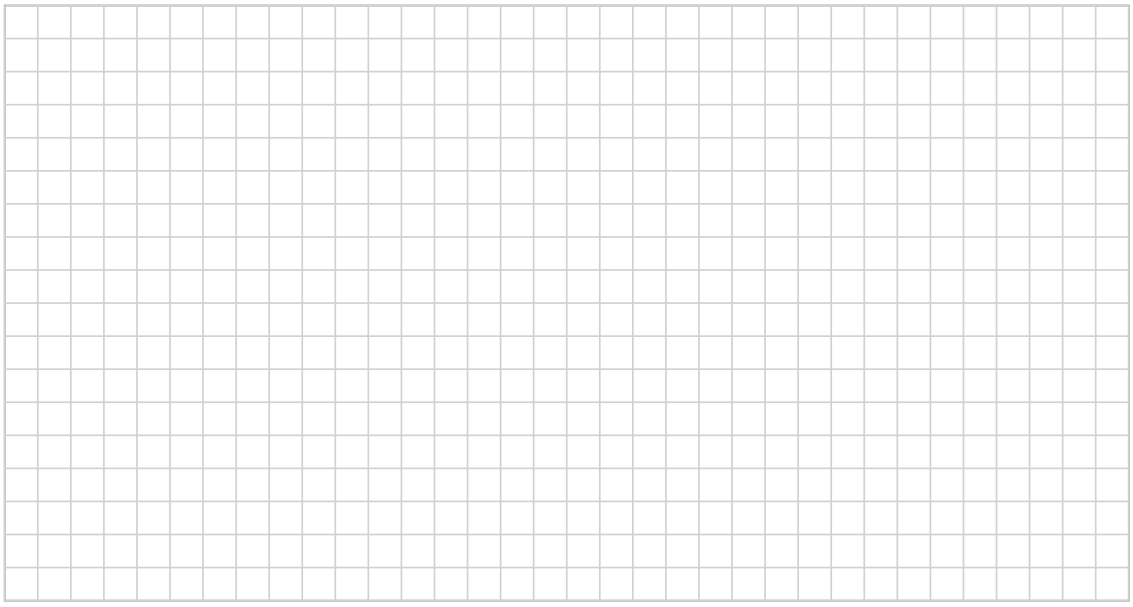
Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: horizontal axis: input change (units); plot note: The origin has multiplicity 2, not one observation.; points: 0 and 0, 0 and 0, 1 and 2, 2 and 1; vertical axis: output change (units)

Study time is paired with a percentage. The paired table records study time (minutes) and accuracy (percent): A: $(15, 55)$, B: $(30, 72)$, C: $(45, 68)$, D: $(60, 88)$. Put study time on the horizontal axis and accuracy on the vertical axis. Label the vertical quantity as percent and retain the dip at 45 minutes.



Choose and label axes, bounds and uniform tick intervals.

Record	study time (minutes)	accuracy (percent)
A	15	55
B	30	72
C	45	68
D	60	88

Your response: _____

Algebra 1

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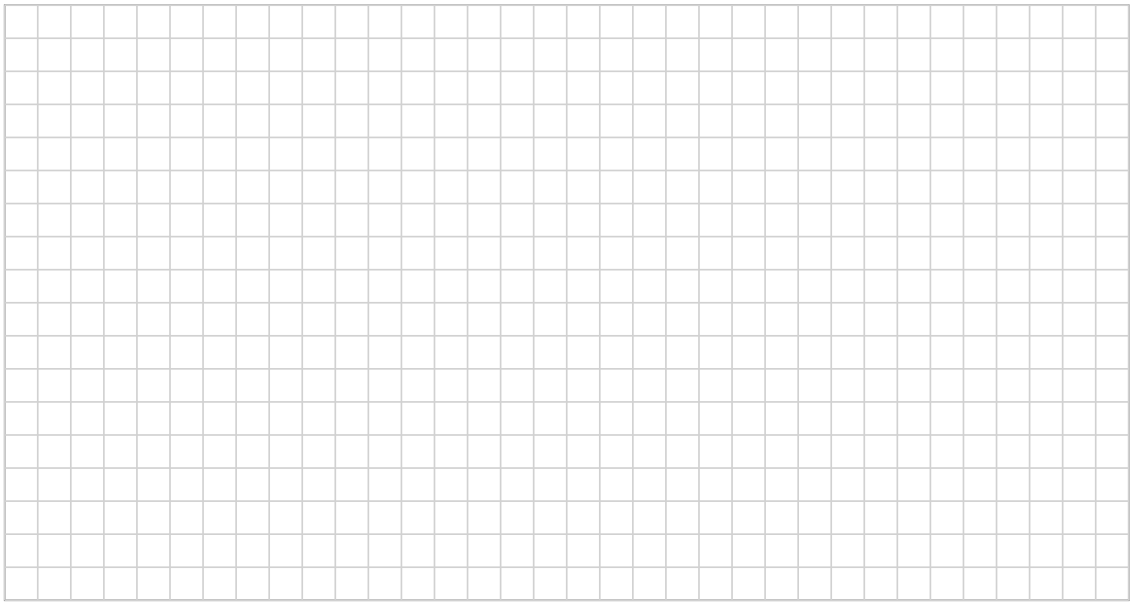
Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

Dose is deliberately set before measuring response. The paired variables are dose (mg) with observed range 0 to 50, and response (points) with observed range 12 to 88. Investigation question: How does response vary as dose is changed? Choose horizontal and vertical variables, give explicit uniform axis bounds and tick intervals, and justify the role assignment.



Choose and label axes, bounds and uniform tick intervals.

Variable	Unit	Observed range
dose	mg	0 to 50
response	points	12 to 88

Scatter Plots and Bivariate Data

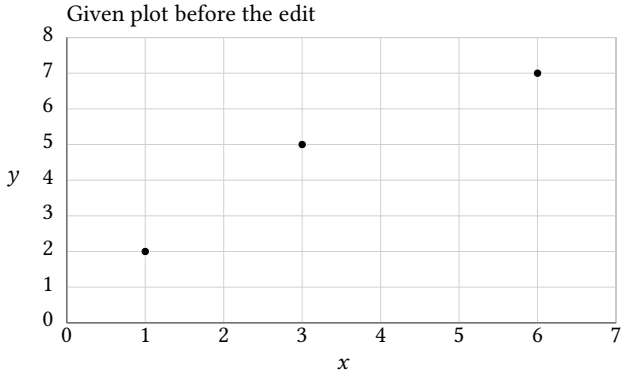
Full Worked Solutions - excerpt

Worked example

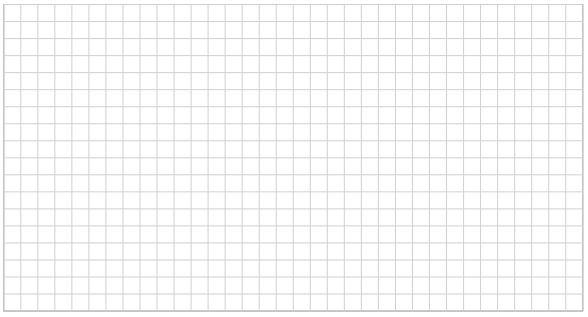
Problem. The current scatter plot contains the ordered-pair multiset $(1,2)$; $(3,5)$; $(6,7)$. A new observation has $x = 4$ and $y = 9$. Update the plot exactly, leaving every unaffected observation unchanged. Add it without connecting points.

Graph 1

Given plot before the edit



Graph 2



Choose and label axes, bounds and uniform tick intervals.

Answer. add: 4 and 9; after: 1 and 2, 3 and 5, 4 and 9, 6 and 7; note: Scatter points remain unconnected.; remove:

Explanation and check.

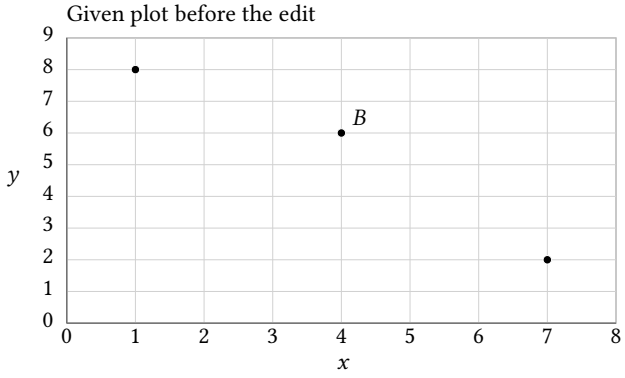
Remove no existing point; add $(4,9)$. The updated multiset is $(1,2)$; $(3,5)$; $(4,9)$; $(6,7)$. Scatter points remain unconnected.

Worked example

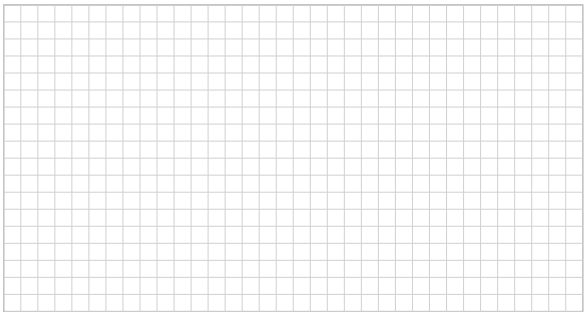
Problem. The current scatter plot contains the ordered-pair multiset $(1,8)$; $(4,6)$; $(7,2)$. Record B was transcribed as $(4,6)$; its source row is actually $(5,9)$. Update the plot exactly, leaving every unaffected observation unchanged. Treat this as one paired replacement, not two observations.

Graph 1

Given plot before the edit



Graph 2



Choose and label axes, bounds and uniform tick intervals.

Answer. add: 5 and 9; after: 1 and 8, 5 and 9, 7 and 2; note: One record moves in both coordinates.; remove: 4 and 6

Explanation and check.

Remove $(4,6)$; add $(5,9)$. The updated multiset is $(1,8)$; $(5,9)$; $(7,2)$. One record moves in both coordinates.