Algebra I

Original exam A, full-length form B and three-week preparation

Why these demands were selected

Every current Q35 asked for a two-variable system. Seven used equations and one used inequalities. Three required a graph. Four asked students to check someone's proposed prices and solve algebraically. In January 2025 students graphed and interpreted an intersection. In January 2026 they checked a claim and solved.

Only two comparable January forms. A systems-only review leaves 76 of 82 possible credits outside that single six-credit task. Rotate function interpretation, equations, statistics and number skills through the same week.

Released forecast example **State design / administration guidance**

Original exam A

Four sets, 8 multiple-choice and 4 written responses. Suggested time: 35–50 min; adjust to local conditions. Each selected response earns one local point. Each written response earns one local point per numbered criterion on the key. Maximum 23 local points. Accept defensible alternative reasoning. Allow consistent follow-through where the local criterion assesses a new operation; annotate the originating error.

Full-length form B

Use the intact linked 2026-06 official booklet except 35. The insert preserves one response position and its maximum credit. Report the original-component subtotal and replacement result separately. State conversion charts are specific to the unmodified state form. Record prior exposure if students have used the released booklet in preparation.

Preparation and feedback

Use the six Studio sessions, then one new retrieval check per week. Use Form A as an independent transfer check after preparation. Form B is optional for full-length rehearsal. On return after absence, students can start with the re-entry line on the current week's sheet. After testing, return to the first unsupported step in the student's reasoning.

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Questions 1–6 • One point per selected response.

1 C • The fixed charge before any deliveries

When n = 0 the cost is $12.

2 B • 0 through 5 deliveries

$5n < 12 + 3n$ gives $n < 6$ in the nonnegative whole-number domain.

3 Written response / 3 local points

1. At n = 1 the costs are $15 and $5, a $10 difference.
2. At n = 6 both cost $30, a zero difference; other accurate contrasting examples work.
3. The per-delivery rates differ by $2, so the signed difference changes by $2 for each added delivery.

4 D • x(8 − x)

Distributing x gives $8x - x^2$.

5 D • 0 ≤ x ≤ 8

The roots are 0 and 8, and the arch lies above the ground between them.

6 Written response / 3 local points

1. Set $-x^2 + 8x = 12$ and rearrange to $(x - 2)(x - 6) = 0$.
2. The endpoints are 2 and 6 feet.
3. The parabola opens downward and reaches 16 at x = 4, so all positions from 2 through 6 inclusive work.

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Questions 7–12 • One point per selected response.

7 B • Median

The middle observation in each ordered list is 10.

8 A • 15 minutes

The original sum of 50 becomes 90 across six observations.

9 Written response / 3 local points

1. Both original means are 10 minutes.
2. A’s range is 4 and B’s range is 12 minutes; another correct spread comparison works.
3. Equal averages can conceal different variability. These observations show more spread at B.

10 A • Number of student tickets

Saturday's second purchase includes five student admissions.

11 C • Friday total and both Friday quantities

Subtract the revenue for student tickets from Friday's total, then divide by the adult quantity.

12 Written response / 6 local points

1. Define a and s as the adult and student prices in dollars.
2. Write 3a + 2s = 58 and 2a + 5s = 79.
3. The proposed pair gives 58 and 90. Its failure on Saturday rules it out.
4. Show an algebraic solution, for example 15a + 10s = 290 minus 4a + 10s = 158 gives 11a = 132.
5. Then a = 12 and s = 11.
6. Substitution gives both required totals. Accept a combined check that explicitly verifies both.

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Replacement scoring and retrieval-check keys

Form B replacement / 35 / 6 credits maximum

1. Define L and S as the two prices.
2. Write 4L + 3S = 89 and 2L + 5S = 83.
3. The proposed prices yield 89 and 69, so the pair fails.
4. Double the second equation and subtract the first to obtain 7S = 77.
5. S = 11 and L = 14.
6. Checking gives 56 + 33 = 89 and 28 + 55 = 83.

Public scoring materials for base form

Week 1 / retrieval check

A gym charges $9 plus $2 per visit. What does the intercept mean, and what is the cost at five visits?
The intercept is the $9 fixed cost; five visits cost $19.

Week 2 / retrieval check

For a(t)=t(10−t), find the zeros and explain what limits a physical time interval between them.
Zeros 0 and 10. If height cannot be negative and the object starts at 0, use 0 through 10.

Week 3 / retrieval check

A pair (4,3) is proposed for x+y=7 and 2x+y=12. Decide and justify.
The first works; 2(4)+3=11, so the pair fails the system.

Department follow-up

ALG1-C1 Check both constraints
If one receipt works and the second fails, what can you conclude about the proposed prices?

ALG1-C2 Translate a boundary
Would spending exactly the budget work? What about one dollar more?

ALG1-C3 Restrict a graph to its context
What would a point in the extension mean in the story? Could that event happen?

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Use the independent exam only after practice, or document the order if using it diagnostically.

Which preparation sessions lead into each exam set?

A1 · Two delivery plans / Studio session(s) 2,6

A2 · An arch in the courtyard / Studio session(s) 5

A3 · Two sets of repair times / Studio session(s) 4

A4 · Admission at the winter show / Studio session(s) 1,3,6

Likely reading of a partial response to investigate

A student uses the Saturday pair to check both bills. Ask them to label each receipt before substituting.

Bridge rehearsal / worked feedback

A van rental charges $16 plus $3 per hour. Compare its cost with $5 per hour and identify when the first is cheaper.

Equal at 8 hours. The fixed-fee plan is cheaper beyond 8 hours. The intercept matters for short rentals.

How to choose the next round

If the model or source was misread, return to the matching prep set and ask for a new representation. If the computation or claim is correct but support is missing, request one neutral explanation and give a parallel independent check. Keep the independent result separate from prompted work.