Geometry

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

Why these demands were selected

All five current final problems required proof. The first two used a geometric diagram. The three 2026 forms used coordinates. January required proving a trapezoid, then establishing parallelism and checking a length relationship.

One comparable January. Coordinate proof deserves rehearsal, along with a diagram-only route. The five problems cannot fix the theorem, figure or location of a future proof.

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 22 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.

Geometry

Questions 1–6 • One point per selected response.

1 C • MN is parallel to QR

Joining the midpoints of two triangle sides gives a segment parallel to the third side.

2 A • 1/2

Both rays from P are scaled by one-half.

3 Written response / 3 local points

1. MN = 9 cm.
2. The small-to-large area ratio is 1:4.
3. Similar figures scale both base and height by one-half, so area scales by one-quarter.

4 A • 24 tan 35°

The known 24 m side is adjacent to the ground angle and height is opposite.

5 B • 24 / cos 35°

Cosine equals adjacent side divided by hypotenuse.

6 Written response / 3 local points

1. The cable shortens because the hypotenuse is $\sqrt{(h^2 + d^2)}$ and d decreases.
2. The ground angle increases.
3. For fixed positive height, h/d increases, so the angle whose tangent is h/d increases.

Geometry

Questions 7–12 • One point per selected response.

7 D • 2/9
80/360 reduces to 2/9.

8 B • 18π in²
Multiply π(9²) by 2/9.

9 Written response / 3 local points
1. First arc = (2/9)(18π) = 4π inches; second arc = 8π inches.
2. The ratio of larger to smaller arc is 2.
3. The area ratio is 4 because area scales with the square of the linear factor.

10 C • 1/2
Rise 2 divided by run 4 is 1/2.

11 D • (1.5, 2)
Average the endpoint coordinates separately.

12 Written response / 5 local points
1. KL and NM have slope 1/2.
2. LM and KN have slope −2, so both pairs of opposite sides are parallel.
3. Adjacent slopes are negative reciprocals, establishing a right angle and therefore a rectangle.
4. KL² = 20 while LM² = 5.
5. Adjacent sides are unequal, ruling out a square. Accept an equivalent complete proof.

Geometry

Replacement scoring and retrieval-check keys

Form B replacement / 35 / 6 credits maximum

1. Use the coordinates to calculate squared lengths for one pair of sides.
2. Show the remaining squared lengths consistently.
3. All four squared lengths are 17.
4. Conclude the simple quadrilateral has four congruent sides, hence is a rhombus.
5. Adjacent slopes are 1/4 and 4, so those sides are not perpendicular.
6. Conclude it is not a square. Accept a valid alternative proof with equivalent evidence.

Public scoring materials for base form

Week 1 / retrieval check

Two sides of a triangle are bisected. The third side is 14. Find the midsegment and justify.
7 units; the triangle midsegment is half the parallel side.

Week 2 / retrieval check

A 6 m pole casts an 8 m shadow. Under matching conditions a tree casts a 20 m shadow. Justify its height.
AA gives similar triangles; 6/8 = h/20, so 15 m.

Week 3 / retrieval check

A quadrilateral has four equal sides. Which extra property makes it a square? Defend.
One interior right angle suffices in a rhombus; consecutive angles in a parallelogram are supplementary and opposite angles equal.

Department follow-up

GEO-C1 Finish a coordinate proof
Which sides do the slopes tell you are parallel, and which definition does that establish here?

GEO-C2 Match a reason to a proof step
What must already be true to use the reason you wrote at this line?

GEO-C3 Support each classification separately
What fact would exclude a rectangle after you have established a parallelogram?

Geometry

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

Which preparation sessions lead into each exam set?

A1 · From a drawing to a theorem / Studio session(s) 1,3

A2 · A cable and a tower / Studio session(s) 3

A3 · Circular window / Studio session(s) 4,5

A4 · A classification that needs proof / Studio session(s) 2,6

Likely reading of a partial response to investigate

A slope or side length is correct but the figure is unnamed. Ask which geometric condition the calculation establishes.

Bridge rehearsal / worked feedback

Two similar sectors have radii 4 and 12. A student claims area and arc length both triple. Decide and justify.

Arc length triples because angle is fixed; area grows by nine because it scales with the square of radius.

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.