Geometry

Released form evidence

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.

Eligible public forms • January 1 / June 2 / August 2

Worked responses and follow-up questions

1 A diagonal that proves something

AC = CA. Angles BAC and DCA are congruent by alternate interior angles. SAS proves triangle BAC congruent to DCA. Corresponding angles BCA and DAC are congruent, so BC is parallel to AD by the converse alternate interior angle theorem.

If parallel lines are claimed from appearance, request the pair of congruent angles that warrants the claim.

2 From coordinates to a proof

AB and CD are horizontal. Slopes of BC and AD both equal 3/2. Both pairs of opposite sides are parallel. Adjacent sides AB and BC are not perpendicular, so the parallelogram is not a rectangle.

If equal slopes are reported without a conclusion, ask what two pairs of parallel sides establish.

3 Why the shadows tell us height

Equal sun angles and right angles give AA similarity. h/8 = 1.5/2, so h = 6 m. A sloping surface or observations at very different times can change the angle relationships.

If the student adds 6 m, have them compare corresponding side ratios.

Average mapped multiple-choice slots per released form

Feature	January	June	August
Prove geometric theorems	4.00	4.50	4.00
Right-triangle trigonometry	2.00	3.00	2.50
Transformations in the plane	2.00	2.00	2.00

A dash marks an unavailable month. Rows can overlap. See seasonal_evidence.csv for counts, uncertainty and the full feature set.

Official design or administration guidance

Geometry

4 Turn an arc into a length

150/360 = 5/12. Length = (5/12)(24π) = 10π m, below the semicircle length 12π. The chord is shorter than the curved arc; it connects the endpoints directly.

If area is used, ask whether the requested quantity covers a surface or follows a path.

5 Which measures scale?

Original 20π cm³. New radius 6 and height 15 give 540π cm³. Volume increases by 27 because all three linear dimensions scale by 3.

If the answer is 60π, expand the square of the new radius before multiplying by height.

6 Prove or disprove a classification

Successive slopes are 1/3, −3, 1/3, −3. All squared side lengths are 10. Four equal sides and a right angle establish a square. Equal diagonals alone could also describe a nonsquare rectangle.

If “looks square” appears, require one calculation for perpendicularity and one for length.

Released practice for each week

Week 1 2026-01 • Q35 • Coordinate proof
Question booklet **Official mapping / guide**

Week 2 2025-06 • Q35 • Diagram-based proof
Question booklet **Official mapping / guide**

Week 3 2026-08 • Q35 • New coordinate proof
Question booklet **Official mapping / guide**