

# Spot the mistake relay and maths taboo for IB

## Maths: answers

IB Math Revision · IB Maths SL and HL (AA and AI) · Teacher answers and notes

A GDC is useful for task B.

### Teacher notes

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- Relay: teams of three. Give each team the first worked solution; when they bring you the mistake and the corrected answer, they get the next one. The first team through all six wins.
- Every slip here is one of the common mistakes on our [AA SL Examiner Insights page](#), in a new example of our own. Show the page afterwards so students can see which mistakes cost the most marks.
- Taboo cards: one student describes the word without saying it or any of the banned words; their team guesses. The sample clue on each card shows that it can be done.
- Pictionary (no words or numbers allowed on the board, 60 seconds each): asymptote, tangent, normal, vector, point of inflection, radian, histogram, box plot.

### Starter

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1.  $40x^2$

- $(2x)^2 = 4x^2$ , so  $10 \times 4x^2 = 40x^2$

2.  $-9$

- The power is done before the minus:  $-(3^2)$ .

3.  $x^2 + C$

- An indefinite integral needs  $+ C$ .

### Task A: Relay, part 1

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a. **324**

- Mistake: that is the 12th term, not the sum.
- $S_{12} = 12/2 \times (5 + 49) = 324$

b.  **$x = \pi/6$  or  $5\pi/6$**

- Mistake: only one solution.  $\sin$  is also positive in the second quadrant.
- $\pi - \pi/6 = 5\pi/6$

c. **0.3**

- Mistake: assuming independence, which was not given.
- $0.5 + 0.4 - 0.6 = 0.3$

### Task B: Relay, part 2

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a.  **$2\pi$  cm**

- Mistake:  $s = r\theta$  needs  $\theta$  in radians.
- $40^\circ = 2\pi/9$ , so  $s = 9 \times 2\pi/9 = 2\pi$

b. **31/32**

- Mistake:  $P(X \geq 1) = 1 - P(X = 0)$ , not  $1 - P(X \leq 1)$ .
- $1 - 1/32 = 31/32$

c.  **$t = 9.01$**

- Mistake:  $\ln 1.08$  was rounded to 0.08 too early.
- $t = 0.693147... \div 0.076961... = 9.006... = 9.01$  (3 s.f.)

## Task C: Maths taboo

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- Sample clue: 'Tells you how fast  $y$  changes as  $x$  changes, at each point of a curve.'**
  - The word is derivative. Any clue that avoids the banned words is fine.
- Sample clue: 'A straight path that a curve gets closer and closer to but never meets.'**
  - The word is asymptote. Any clue that avoids the banned words is fine.
- Sample clue: 'The answer to: how many 10s do I multiply to get 1000? (Three.)'**
  - The word is logarithm. Any clue that avoids the banned words is fine.
- Sample clue: 'The size of a turn where the arc is exactly as long as the radius.'**
  - The word is radian. Any clue that avoids the banned words is fine.

## Extension

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1.  **$n = 40$ :  $1681 = 41^2$**

- Mistake: checking examples is not a proof.
- $n = 40$ :  $1600 + 40 + 41 = 1681 = 41 \times 41$  (every  $n$  from 0 to 39 gives a prime).

Every question is original and every answer was recomputed by computer before publishing.