

Spot the mistake relay and maths taboo for IB Maths

IB Math Revision · IB Maths SL and HL (AA and AI) · Student sheet

Name _____

Class _____

Date _____

A GDC is useful for task B.

Starter (5 minutes)

1. The x^2 term of $(1 + 2x)^5$ is $10 \times 2x^2 = 20x^2$

2. $-3^2 = 9$

3. $\int 2x \, dx = x^2$

Main activity (34 minutes)

Task A: Relay, part 1

Each worked solution has exactly one mistake. Find it, then give the correct answer.

a. Find the sum of the first 12 terms of 5, 9, 13, ... *Working:* $u_{12} = 5 + 11 \times 4 = 49$.

b. Solve $2 \sin x = 1$ for $0 \leq x \leq 2\pi$. *Working:* $\sin x = 1/2$, so $x = \pi/6$.

c. $P(A) = 0.5$, $P(B) = 0.4$ and $P(A \cup B) = 0.6$. Find $P(A \cap B)$. *Working:* $0.5 \times 0.4 = 0.2$.

Task B: Relay, part 2

Each worked solution has exactly one mistake. Find it, then give the correct answer.

a. Find the arc length of a sector of radius 9 cm and angle 40° . *Working:* $s = r\theta = 9 \times 40 = 360$ cm.

b. $X \sim B(5, 0.5)$. Find $P(X \geq 1)$. *Working:* $1 - P(X \leq 1) = 1 - 6/32 = 26/32$.

c. Solve $1.08^t = 2$. *Working:* $t = \ln 2 \div \ln 1.08 = 0.693 \div 0.08 = 8.66$.

Task C: Maths taboo

Describe the word to your team without saying it or any of the banned words.

- a. Describe **DERIVATIVE** without saying: gradient, slope, differentiate, rate.
- b. Describe **ASYMPTOTE** without saying: approach, line, touch, infinity.
- c. Describe **LOGARITHM** without saying: power, exponent, log, base.
- d. Describe **RADIAN** without saying: degree, angle, pi, circle.

Extension

1. A student says $n^2 + n + 41$ is always prime, because it is prime for $n = 0, 1, 2, 3, 4$ and 5 . Find the smallest whole number n for which it is not prime.