

End-of-year maths quiz for IB Maths: answers

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

No GDC needed.

Teacher notes

- How to run it: teams of three or four with a mini whiteboard. Read each question out (or use 'Play it on the projector' above for a Jeopardy board with team scores). Questions get harder through each round: 1 point for question 1 up to 5 points for question 5, or use the board's 100 to 500.
- Tie-break: every team writes one estimate; the closest wins.

Starter

1. **42**

- $6 \times 7 = 42$

2. **9**

- $9 \times 9 = 81$

Round 1: Number and algebra

a. **4**

- $3^4 = 81$

b. **62**

- $5 + 19 \times 3$

c. **16**

- $8/(1 - \frac{1}{2})$

d. **$x = 4$**

- $x + 1 = 5$

e. **40**

- ${}^5C_3 \times 2^2 = 10 \times 4$

Round 2: Functions

a. **4**

- $2x + 3 = 11$

b. **(2, 5)**

- Vertex form

c. **$x = 4$**

- The denominator is zero at $x = 4$.

d. **9**

- $g(2) = 3$ and $f(3) = 9$

e. **$x = \frac{1}{2} \ln 7$**

- $2x = \ln 7$

Round 3: Geometry and trigonometry

- a. **$\frac{1}{2}$**
 - Standard value
- b. **2π cm**
 - $r\theta = 6 \times \pi/3$
- c. **7**
 - $\sqrt{4 + 9 + 36} = 7$
- d. **$\pi/6$ and $5\pi/6$**
 - sin is positive in the first and second quadrants.
- e. **10 cm^2**
 - $\frac{1}{2} \times 8 \times 5 \times \sin 30^\circ = 10$

Round 4: Statistics and probability

- a. **8**
 - $40 \div 5$
- b. **0.15**
 - 0.3×0.5
- c. **2**
 - $np = 2$
- d. **0.5**
 - 50 is the mean, and the curve is symmetric.
- e. **0.3**
 - $0.6 + 0.5 - 0.8$

Round 5: Calculus

- a. **$4x^3$**
 - Power rule
- b. **$2x^3 + C$**
 - Add 1 to the power and divide by it.
- c. **7**
 - $2x - 3 = 7$
- d. **8**
 - $[x^3]_0^2 = 8$
- e. **1**
 - Product rule: $e^x + xe^x = 1$ at $x = 0$

Extension

- 1. **604 800**
 - $60 \times 60 \times 24 \times 7 = 604\,800$

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