Fibonacci Day maths for IB Maths SL and HL: MYP / KS3: answers

IB Math Revision · MYP / KS3 (ages 11 to 14) · 23 November · Teacher answers and notes

No calculator needed. Every answer works out exactly.

Teacher notes

- Pitched at MYP and KS3 (ages 11 to 14). Every question works without a calculator; ask for a short method with each answer.
- Task B is the start of the Fibonacci spiral: students can draw quarter circles in each square.

Starter

1. **13, 21, 34**
   - Each term is the sum of the two before it.
2. **2 : 3**
   - Divide both by 4.
3. **22**
   - 4 + 6 × 3 = 22
4. **34**
   - ..., 13, 21, 34, 55, ...

Task A: The rabbit puzzle

a. **21 pairs**
   - 1, 1, 2, 3, 5, 8, 13, 21

b. **Month 12**
   - Month 11 has 89 pairs and month 12 has 144.

c. **20, which is 1 less than 21**
   - 1 + 1 + 2 + 3 + 5 + 8 = 20
   - The 8th Fibonacci number is 21.

Task B: Fibonacci squares

a. **13 cm by 8 cm**
   - The last square is 8 by 8, and 8 + 5 = 13.

b. **104 cm^2**
   - 1 + 1 + 4 + 9 + 25 + 64 = 104
   - Check: 13 × 8 = 104

c. **42 cm**
   - 2 × (13 + 8) = 42

Extension

1. **10**
   - The pattern of odd and even repeats: odd, odd, even.
   - 30 ÷ 3 = 10

Every question is original and every answer was checked before publishing.