

Summer maths escape room for A Level Maths: answers

A Level Math Revision · A Level Maths (Year 12 and Year 13) · Teacher answers and notes

No calculator needed.

Teacher notes

- How to run it: print the student sheet and cut out the six lock cards. Give each team lock 1. When a team brings you the right code, give them the next card (the answer key is in the answers PDF). The first team to open lock 6 escapes. Teams can also have every card at once and race through them in order.
- Each code is used in the next lock, so check every code before the team moves on: one slip early on breaks the chain.

Starter

1. **12**
 - $12 \times 12 = 144$
2. **6x**
 - $2 \times 3x$
3. **3/2**
 - $1/2 + 1$

Lock 1: The shells

- a. **3**
 - $125 = 5^3$

Lock 2: The slide

- a. **12**
 - $f'(x) = 4x$
 - $f(3) = 12$

Lock 3: The steps

- a. **12**
 - $5 + 2(n - 1) = 27$
 - $n = 12$

Lock 4: The sand

- a. **32**
 - $12 \times [x^3/3]_0^2 = 12 \times 8/3 = 32$

Lock 5: The log lock

- a. **5**
 - $32 = 2^5$

Lock 6: The beach hut

a. **20**

- ${}^6C_3 = 20$

Extension

1. **63/256**

- ${}^{10}C_5 \times 0.5^{10} = 252/1024 = 63/256$

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