Christmas maths escape room for CBSE Class 10: Class 11: answers

CBSE 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. **3**
   - $3^3 = 27$
2. **$4x^3$**
   - Bring down the power.
3. **3**
   - $2^3 = 8$

Lock 1: The wrapping room

a. **7**

- $64 = 2^6$, so $x - 1 = 6$

Lock 2: The list

a. **84**

- ${}^7C_2 \times 2^2 = 21 \times 4 = 84$

Lock 3: The chimney

a. **4**

- $[x^3]_0^a = a^3 = 64$

Lock 4: The tinsel

a. **8**

- $4 / (1 - 1/2) = 8$

Lock 5: The factor lock

a. **9**

- $c = 2$
- $f(2) = 8 - 4 + 5 = 9$

Lock 6: The workshop door

a. **126**

- $S_9 = 9/2 \times (2 \times 2 + 8 \times 3) = 9/2 \times 28 = 126$

Extension

1. **20 m**
   - $dh/dt = 20 - 10t = 0$ at $t = 2$
   - $h = 40 - 20 = 20$

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