Day 1: Forest Vault Mission

Your Mission

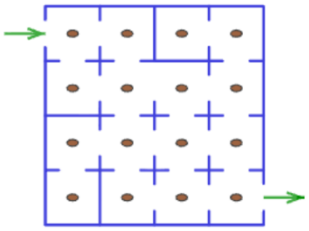
The giant Golden Acorn in our village is stolen and locked inside a secret forest vault. A sneaky villain set up traps at five gates to keep it safe. We need your math skills to break through the gates and get it back!

Trap 1: The Robot Squirrel

There is a robot squirrel at the first gate. To open the gate, we must figure out the robot squirrel's highest record of gathering nuts so we can escape it.

A squirrel went through the maze gathering nuts (see the picture). It could go only once through each door between the rooms of the maze. What is the greatest number of nuts it could have gathered?

(A) 7 (B) 10 (C) 11 (D) 12 (E) 15

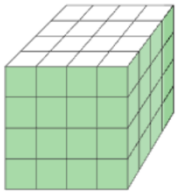


Trap 2: The Giant Block

There is a giant cube in our way at the second gate! The gate opens only if we know the correct painting pattern on this cube.

We made a big cube using 64 small white cubes, and then we painted five of the sides of the big cube. How many of the small cubes have exactly two sides painted?

(A) 4 (B) 8 (C) 16 (D) 20 (E) 24



Trap 3: The Broken Bridge

A giant domino snake is blocking the third gate. His body has a missing number. He needs our help to figure it out, so he will let us go.

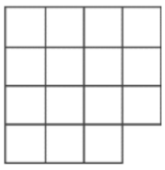


Frank made a domino snake out of seven tiles. He put the tiles next to each other so that the sides with the same number of dots were touching. Originally the snake had 33 dots on its back. However, his brother George took away two tiles from the snake (see the picture). How many dots were in the place with the question mark?

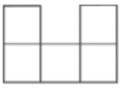
(A) 2 (B) 3 (C) 4 (D) 5 (E) 6

Trap 4: The Vault Keyhole

A sliding shape puzzle locks the fourth gate. We need to find out the shape of each piece to unlock the gate.



17. The figure shown to the left is divided into three identical pieces. What does each of the pieces look like?

(A)  (B)  (C)  (D)  (E) 

Trap 5: The Angry Bugs

Five angry ladybugs block the fifth gate. They are confused about text messages. We need to help them so they will let us through.

There are 5 ladybugs (see picture to the right). Two ladybugs are friends with each other only if the numbers of spots that they have differ exactly by 1. On Kangaroo Day each of the ladybugs sent one text greeting to each of her friends. How many text messages were sent?



(A) 2 (B) 4 (C) 6 (D) 8 (E) 9

The Master Code

You beat the traps! You are inside the vault now to fetch the acorn and leave. An alarm goes off when you touch the acorn. To turn off the alarm and leave safely, fill in this secret code using the words below.

Word Bank: *BACKWARDS, DRAW, ELIMINATE, COUNT, SYMMETRY*

1. Grab your pencil and _____ on the paper to test a path.
2. For 3D blocks, look closely and _____ the edges one by one.
3. If you know the total number but are missing a piece, find out what you already have and work _____.
4. If you need to cut a shape into identical parts, look for _____ to see how pieces can turn to fit.
5. For multiple-choice questions, always _____ the answers that are definitely wrong to make it easier.

Mission complete! You caught the thief and returned the Golden Acorn.



