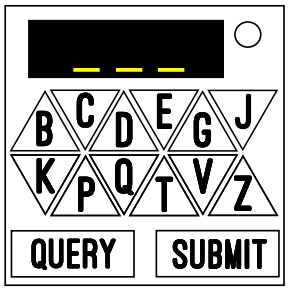
On the Subject of Three Bits



A shave and a haircut at an inflated price!?!? Unacceptable.

- This module contains a display, a query button, a submit button, and 12 triangular lettered buttons.
- Unseen inside of the module, there is a triangular maze of lasers and mirrors.
- To solve this module, you must submit the labels for the three active mirrors inside of the maze. There will always be exactly three.
- The only way to get information about the maze is to query lasers three at a time, which will output where the lasers ended up after traversing the maze.

WARNING: This module is built off of a much older poorly made module. Any inputs when the module is not ready, duplicate letters in a query/submission, an incorrect submission, or an incomplete query/submission will cause the module to strike.

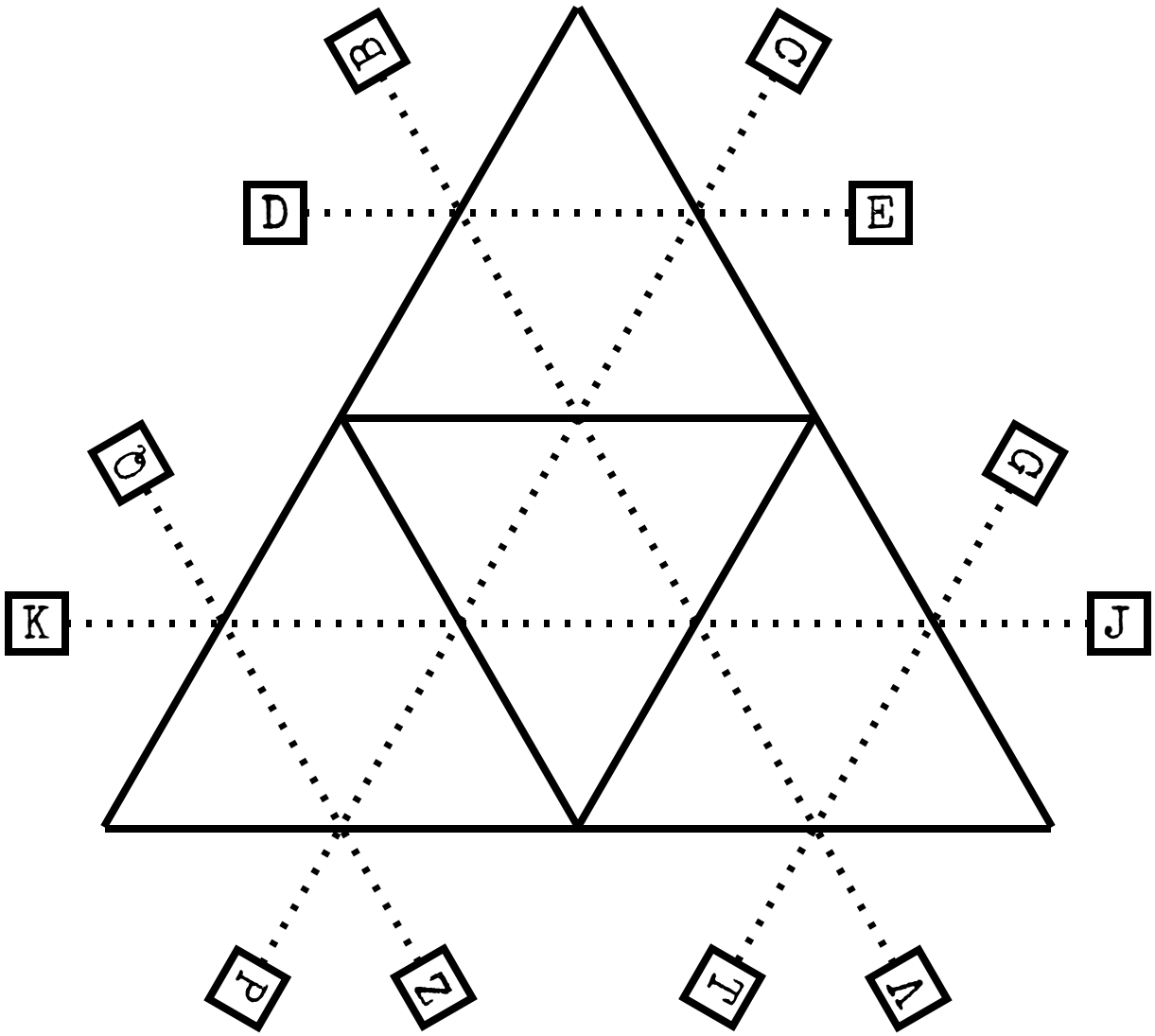
NOTE: If there are multiple possible trios of mirrors that have all the same input-output pairs, any such trio will work.

ATTENTION: Due to the fact that this device does not know the internals of the maze, outputs are essentially in a random order per query. Querying BTK and receiving PVZ does not necessarily mean that B maps to P, T maps to V, or K maps to Z. It means that B maps to one of P, V, or Z, and such with T and K.

How the mirror maze works

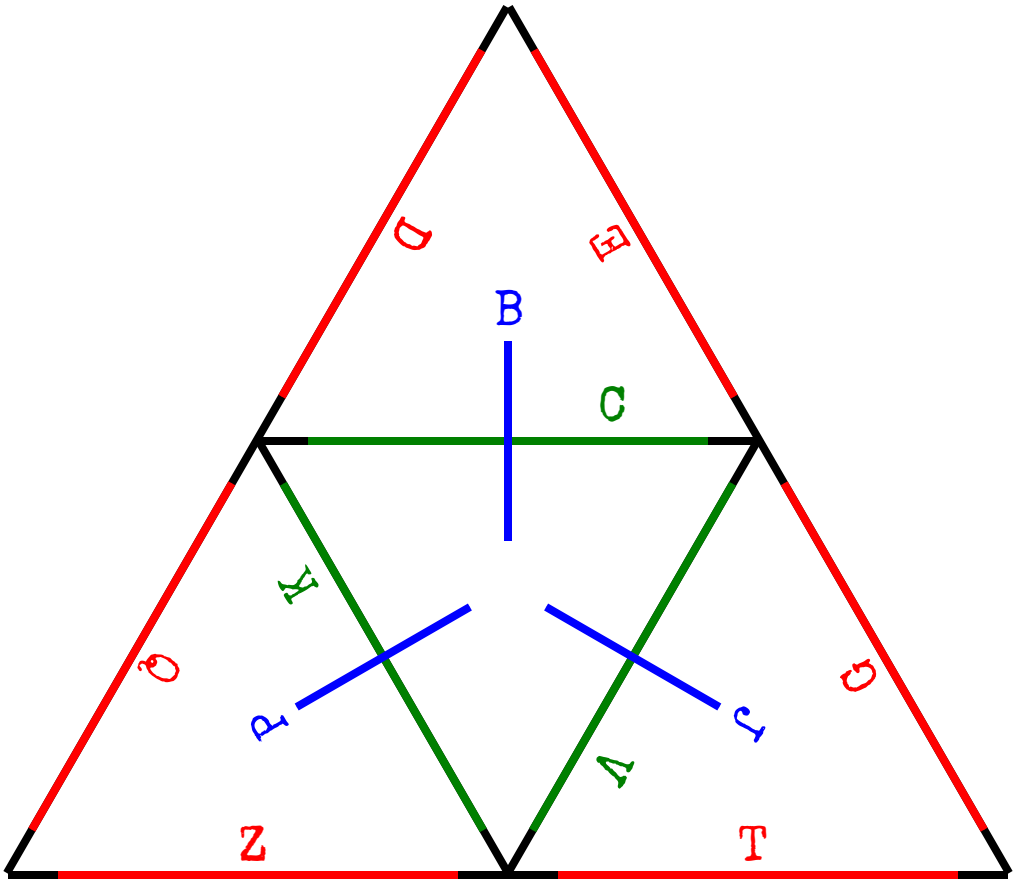
There are 12 lasers outside of the maze that point inwards, each labeled with a letter. When the letter of a laser is queried, the laser emits a ray into the maze. This ray may reflect off of any mirrors in the maze and will eventually travel out of the maze. The module outputs the label of the laser that receives the ray as it exits the maze.

The diagram below shows the position, orientation, and labels of the lasers, as well as what they would map to if the maze had no mirrors.



How the mirror maze works cont.

There are 12 possible mirror locations, which reflect any ray that would normally pass through them on both sides. Below is a diagram of all the mirrors, as well as their labels.



Examples:

If mirror D was the only active mirror, lasers D and B would map to each other, lasers E and V would map to each other.

If mirror C was the only active mirror, lasers B and C would map to each other, lasers P and V would map to each other.

If mirror B was the only active mirror, lasers B and P would map to each other, lasers C and V would map to each other.

If mirrors B and C were the only active mirrors, laser B would map to itself, as with C, P, and V.