

In Case I don't make it:

If you're reading this, then hope still flickers in the darkness that has enveloped our world. I write this letter in haste, knowing that every moment wasted brings us closer to oblivion.

My name is Dr. Emily Laperto, lead researcher at the underground facility known only by its code-name, "Project Clausum." Our intentions were noble - to push the boundaries of science and mathematics to combat this disease that has ravaged humanity. It was my colleague, Dr. Alexander Gesperrt, who made a breakthrough. In the depths of our facility, he was on the verge of discovery for a potential antidote to the plague that has turned our loved ones into mindless, ravenous creatures. But before he could finish it, chaos erupted. The infection breached our defences, turning Alex and the rest of our colleagues into grotesque monsters hungry for flesh.

Amidst the maelstrom of chaos, I secured the lab to the best of my ability, knowing that it was imperative to safeguard our research from the outside world.

You must venture into the heart of the forest where our facility lies hidden. Look for a hatch, camouflaged by nature but bearing a distinct circular shape. Inside, you will find the fruits of our labor, the culmination of years of research and sacrifice. But beware, for the undead roam these halls, and they will stop at nothing to prevent you from reaching the cure.

To open the hatch, you must find the code that will maximize the probability reading - a security measure devised to keep the lab safe from intruders. The code is a 3 digit number. I've scratched clues in the trees surrounding the hatch describing the probability distribution for a single digit. $P(0)$ is the probability of observing a zero on a single digit.

The digits are entirely independent and can only be 0-9. Additionally they must adhere to both of the following:

- The digit sum of your code must be 9
- Your code must be a multiple of 4



If there is any confusion, the red button on the hatch will generate a number with its respective probability reading.

Once inside, you'll have to find Dr. Gesperrt's lab and complete his work. Be ready for anything!

Hatch location:

Latitude: 51.152176° N

Longitude: -114.203069° W