## THE ADVENTURES OF KELLY MULLLOY: THE GOLDEN SUBMARINE

Kelly Mulloy is on the trail of a fortune in gold that was lost during World War II! She has reason to believe that the Germans hid it on a U-boat right before the end of the war. Now she is exploring a secret underground bunker beneath Des Moines, lowa.

Kelly reaches an elevator. She notices that the buttons are numbered strangely. The first five buttons are labeled: $1,3,9,27,81$. Then, there is a keypad that will allow her to enter any number she wishes. Kelly suspects that she needs to enter the next number in the sequence. Any other number will probably trigger a deadly trap! What number does Ms. Mulloy need to enter?

A giant vault door blocks Kelly's way. It appears to be opened by entering a 4-digit combination. Kelly was able to trick punk rock icon and rival treasure hunter Henry Rollins into providing a series of numbers that may provide a clue. Henry was angry about it, but then again, Henry is always angry. The numbers are $354,574,794$ and 1014. The next number in the sequence should open the lock. What is the combination?


The door swings open to reveal a giant robot! Kelly ducks behind some equipment just before it starts firing its machine-guns. She quickly realizes this robot is incredibly stupid and will shoot at anything that moves. She begins to throw small pieces of candy corn out from behind her hiding place so that the robot will waste all of its ammo. The robot has 15,000 rounds of ammunition and uses about 100 of them every time it shoots. How many pieces of candy corn is Kelly going to need in order to triumph?

The robot finally runs out of ammo. Kelly jumps up and hits the "off" switch before it can reload. Behind the robot is the submarine full of gold. Those Germans were pretty shrewd to hide it a thousand miles from the nearest coast! Kelly re-programs the robot to lug the gold back up to the surface for her. There are 22 tons of gold. The robot can carry .4 tons per trip. How many trips will it take for the robot to haul everything out of the secret lair?

