Problem
In this problem we had to determine the amount of rats on an island based on certain information. This information included that the island started with just two rats (one male and one female) and starting on Jan 1 and repeating every 40 days, the female gave birth to 6 rats, half of which were female. Each time a new litter was born, it took 120 days for the females in that litter to produce young of their own and every 40 days after that. We had to figure out the total Population after 1 year of the rats including the original 2.

Process
I first read the problem over a few times to fully grasp the question and information. I then just stated doing random calculations and looked for some type of pattern. This confused me because I kept getting myself lost and forgetting how I got an answer. I then began to create a chart with the original mother’s litters as my rows and intervals of 40 days starting with 120 as my columns. I ran into trouble at first when I forgot that it took 120 days for a new litter to be able to give birth and I ended up with an extremely large answer. After correcting this, I made another chart and forgot to extend the third generations of rats across for a year. Once everything was settled I ended up with 10 rows that began with 6 (original mother’s children). Of those rows, the first 7 (up to 240) contained the number 18 (amount of grandrats) and/or 54 (the amount of great-grand rats) and in the first row a 162 (the amount of great great grandrats).

Solution
I came up with an answer of 1808 rats. I feel that by following my chart the correct way it should be right. I accounted for every litter and made sure to follow the guidelines of the 120 and 40 day periods. I checked my work repeatedly and made sure that I did not leave anything out or make a wrong calculation. The chart also seemed to follow a pattern for the first seven rows. The number of ‘18s’ and the number of ‘54s’ decreased as we moved down each row. With the discovery of a pattern and my repeated calculations, I feel that this answer is accurate.