**Activity 5.6.2 Sam’s Story**

Do you remember Sam from Activity 5.1.1? Rather than take $1000 on New Year’s Eve, he chose to take the penny that night. His uncle had therefor agreed that each day for the first 64 days of the new year, his uncle was to give Sam double the amount of the previous day. Below is Uncle Charlie’s statement.

**Uncle Charlie:** This penny symbolizes an agreement. If you take the penny, I will give you double that tomorrow, the first day of the new year. Then on the second day of the new year, I will give you double what I did on the first day. I will continue with this pattern for 64 days.

1. In total, how much money had Sam received from his uncle at the end of the fourteenth day of the new year? (Hint: Think carefully about *n*. It is not 14!) Give your answer in dollars.
2. In total, how much money should Sam have received from his uncle at midnight on February 2?
3. In total, how much money should Sam have received from his uncle at the end of the 64th day?
4. A. Sam had no prior savings. Assuming that Sam put all of the money that his uncle gave him into a box in his closet, on what day did he first have a million dollars?

B. On what day will Sam get at least 1,000,000 dollars from his uncle?

1. Sam’s uncle had a total net worth of $10,000,000 on New Year’s Eve. He lived up to the deal with Sam as long as possible. On what day did he go bankrupt?