Student:_____Class:_____Date_____

Arithmetic and geometric sequences and series
Student Activity Sheet 4; *Exploring* "Infinite series"

1. Your doctor prescribes a daily 20 mg dose of a popular allergy medication, No-Drip. Roughly 24 hours after a first dose of the medicine is used, 40% of the No-Drip has been flushed from the body. You take 20 mg of No-Drip once a day. Make a table to show the maximum amount of No-Drip in your system each day for six days. Express each day's amount as a sum. Then, sketch a graph of the maximum No-Drip and the day number for at least fourteen days.

2. Find the partial sum of the first seven terms in the series described in question 1.

3. What do you notice about the graph of the amount of No-Drip in your system over fourteen days? What does this mean in the context of the problem? Confirm your claim analytically.

4. Make a conjecture about the convergence of arithmetic and geometric series.