*AAT Name: Key

Chapter 10: Geometric Sequences and Series - Application (IC) Date: _____ Period: _____

You propose to your parents that they begin your weekly allowance at 1 penny for the first week of the year. They must triple your allowance every week for the remainder of the year.

1. Write a recursive formula to compute your weekly allowance each week.

$a_{n+1} = 3 \cdot a_n$

2. Write an explicit formula to compute your weekly allowance each week.

$a_n = .01(3^{n-1})$

3. Compute your allowance during the:

a. 6th week of the year.

$a_6 = .01(3^{6-1}) = \$2.43$

b. 12th week of the year.

$a_{12} = .01(3^{12-1}) = \$1,771.47$

c. 21st week of the year.

$a_{21} = .01(3^{21-1}) = \$34,867,844.01$

4. Do you think your parents would agree to your proposal? Explain why or why not.

No; By 21st week, they would need to give me more $ than they make all year.