NC Math 1B Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 6 Lesson 1 Homework: Recursive Geometric Sequence**

**I. Write a recursive formula for the following sequences.**

1. $-4, -8, -16, -32, …$

2. $320, 80, 20, 5, …$

3. $-6, 60, -600, 6000$

**II. Using the recursive formula, find the first four terms for the geometric sequence.**

1. $A\_{n}=5A\_{n-1}$ $A\_{1}=8$

2. $A\_{n}=\frac{1}{2}A\_{n-1}$ $A\_{1}=500$

3. $A\_{n}=1.2A\_{n-1}$ $A\_{1}=5$

**III. Write a recursive formula using recursive notation to model each scenario.**

1. Each year in the month of March the NCAA holds its annual basketball tournament. The tournament starts with 64 teams and half the teams are eliminated each round.

2. The oak tree in front of CHS lost 25 acorns the first day of fall. Each day the number of acorns that fell off the tree is three times the number from the day before.

3. A bouncy ball is dropped from a height of 6 feet. Each time the ball bounces it loses 27% of its height.

**IV. Determine the common ratio (r) for each geometric sequence.**

1. $-3, -12, -48, -192,…$

2. $-80, 20, -5, 1.25, …$

3. $0.45, 0.9, 1.8, 3.6, …$