

Name: _____

Geometric Sequence and Series

Exercise 1: For the geometric sequence, write a formula for a_n , then use it to determine each indicated term.

- 1) 5, 10, 20, 40, ... , a_{15}
- 2) $2, \frac{2}{3}, \frac{2}{9}, \frac{2}{27}, \dots, a_{11}$
- 3) -2, 4, -8, 16, ... , a_{15}

Exercise 2: Find the specified terms of the indicated geometric sequence.

- 1) seventeenth term of 2, 6, 18, ...
- 2) Ninth term of 1, 2, 4, ...
- 3) Tenth term of 12, 6, 3, ...
- 4) Eight term of 54, 18, 6, ...
- 5) Tenth term of 1, -2, 4, ...
- 6) Sixth term of $1, -\frac{3}{2}, \frac{9}{4}, \dots$
- 7) 51st term of the sequence for which $a_1 = 7$ and $r = 1.02$
- 8) 43rd term of the sequence for which $a_1 = 100$ and $r = 1.04$
- 9) 37th term of the sequence for which $a_1 = 29$ and $r = 0.92$
- 10) 31st term of the sequence for which $a_1 = 100$ and $r = 0.95$
- 11) 28th term of the sequence for which $a_1 = 0.01$ and $r = -3$
- 12) 64th term of the sequence for which $a_1 = 1$ and $r = -2$

Exercise 3: Find out which term the given numbers is in the indicated sequence.

- 1) 1536 in the geometric sequence with $a_1 = 3$ and $r = 2$
- 2) 4374 in the geometric sequence with $a_1 = 2$ and $r = 3$
- 3) 1 in the geometric sequence with $a_1 = 729$ and $r = \frac{1}{3}$
- 4) 27 in the geometric sequence with $a_1 = 1728$ and $r = \frac{1}{2}$
- 5) -1215 in the geometric sequence with $a_1 = 5$ and $r = -3$
- 6) $-170\frac{2}{3}$ in the geometric sequence with $a_1 = \frac{1}{3}$ and $r = -2$