

CC Coordinate Algebra Unit 3 – Linear and Exponential Equations Homework – Day 28

Name: _____ Date: _____

Arithmetic and Geometric Sequences Practice Homework

For each Sequence, Pattern, Table, or Story below identify whether it is Arithmetic or Geometric, find the common difference or common ratio, write an Explicit Formula, then use your formulas to find the given term.

Representation	Arithmetic or Geometric	Common Difference or Ratio	Explicit Formula	Given Term
1. -6, 12, -24, ...				a_{10}
2. 1, 3, 9, 27, ...				a_5
3. -10, -8, -6, -4, ...				a_{56}
4. 72, 48, 24, ...				a_5
5. -31, -23, -15, ...				a_{32}
6. -4, -12, -36, ...				a_3
7. -2, -10, -50, ...				a_7
8. 5, 11, 17, ...				a_{15}
9. 4, 24, 144, ...				a_8
10. 21, 16, 11, ...				a_{11}

Representation	Arithmetic or Geometric	Common Difference or Ratio	Explicit Formula	Given Term
1) $-6, 12, -24, \dots$ $\begin{array}{c} \underbrace{\quad} \\ -2 \quad -2 \end{array}$	Geometric	$r = -2$	$a_n = -6(-2)^{n-1}$	$a_{10} = 3072$ $a_{10} = -6(-2)^{10-1}$
2) $1, 3, 9, 27, \dots$ $\begin{array}{c} \underbrace{\quad} \\ 3 \quad 3 \end{array}$	Geo.	$r = 3$	$a_n = 1(3)^{n-1}$	$a_5 = 81$ $a_5 = 1(3)^{5-1}$
3) $10, -8, -6, -4, \dots$ $\begin{array}{c} \underbrace{\quad} \\ +2 \quad +2 \end{array}$	Arith.	$d = 2$	$a_n = -10 + 2(n-1)$	$a_{56} = 100$ $a_{56} = -10 + 2(56-1)$
4) $72, 48, 24, \dots$ $\begin{array}{c} \underbrace{\quad} \\ -24 \quad -24 \end{array}$	Arith.	$d = -24$	$a_n = 72 + 24(n-1)$	$a_5 = -24$ $a_5 = 72 + 24(5-1)$