Algebra I
Arithmetic and Geometric Sequences
Quiz Review

Name Key
Date _____ Hour _____

SHOW YOUR WORK!

1) Find the common difference and the next two terms of the sequence.

a) -4, 3, 10, 17, ... d = 7 Next two terms 24 and 31

b) b) 10, 1, -8, -17, ... d = −9 Next two terms −26 and −35

2) Find the common ratio and the 7th term of the sequence.

a) $\frac{1}{49}, \frac{1}{7}, 1, 7, 49$ ... r = 7

7th term= 2401

c) $16, 4, 1, \frac{1}{4}, \frac{1}{16}$ ... r = 1/4

7th term = 1/256

3) Find the common ratio of the sequence and the next two terms.

a) 3, -15, 75, -375... r = −5

Next two terms 1,875 and −9,375

b) 4, 40, 400, ...

r = 10

Next two terms 4,000 and 40,000

Determine if the following sequences are arithmetic, geometric, or neither.
If it is arithmetic or geometric **give the common ratio or common difference.**
Show your work and **circle your answer.**

4) 13, 26, 39, 52...

A) Arithmetic
d = 13

B) Geometric
r = _____

C) Neither

5) $36, 4, \frac{4}{9}, \frac{4}{81}, \frac{4}{729}$ ...

A) Arithmetic
d = _____

B) Geometric
r = 1/9

C) Neither

6) 3, -1, 2, 1, 3...

A) Arithmetic
d = _____

B) Geometric
r = _____

C) Neither

Write the recursive and explicit formula for the following sequences.
(YOU NEED TO MEMORIZE THESE FOR YOUR QUIZ! STUDY YOUR NOTES)

7) 18, 15, 12, 9, 6

Recursive Formula
$a_1 = 18$ $a = a_{n-1} - 3$
Explicit Formula
$a_n = 18 + (n-1) \cdot -3$ or $a_n = 21 - 3n$

8) 80, 20, 5, 1.25

Recursive Formula
$a_1 = 80$ $a_n = a_{n-1} \cdot \frac{1}{4}$
Explicit Formula
$a_n = 80 \cdot \left(\frac{1}{4}\right)^{n-1}$

9) 97, 104, 111, 118

Recursive Formula
$a_1 = 97$ $a_n = a_{n-1} + 7$
Explicit Formula
$a_n = 97 + (n-1) \cdot 7$ or $a_n = 90 + 7n$

10) $\frac{1}{36}, -\frac{1}{6}, 1, -6, +36$

Recursive Formula
$a_1 = \frac{1}{36}$ $a_n = a_{n-1} \cdot (-6)$
Explicit Formula
$a_n = \frac{1}{36} \cdot (-6)^{n-1}$