Algebra 2 Name_____

9.3 Geometric Sequences

Period____

Determine if the sequence is geometric. If it is, find the common ratio.

1) $-4,\ -16,\ -64,\ -256,\ ...$

2) $0,\ 2,\ 6,\ 14,\ ...$

3) $-2,\ 4,\ -8,\ 16,\ ...$

4) $-2,\ -4,\ -8,\ -16,\ ...$

5) $5,\ 7,\ 10,\ 14,\ ...$

Given the explicit formula for a geometric sequence find the first four terms.

6) $a_n = -2 \cdot 5^{n-1}$

7) $a_n = -3 \cdot (-2)^{n-1}$

8) $a_n = 3 \cdot 3^{n-1}$

Given the recursive formula for a geometric sequence find the first four terms.

9) $a_n = a_{n-1} \cdot -6$
$a_1 = 1$

10) $a_n = a_{n-1} \cdot 5$
$a_1 = 3$

11) $a_n = a_{n-1} \cdot 3$
$a_1 = 1$

Find the explicit formula and the next three terms in the sequence.

12) $a_1 = 3,\ r = 5$

13) $a_1 = 1,\ r = 5$

14) $a_1 = -1,\ r = -3$

15) $a_1 = 4,\ r = 6$

Find both the explicit formula and the recursive formula.

16) 3, 18, 108, 648, ...

17) 1, −5, 25, −125, ...

18) 4, 20, 100, 500, ...

19) −3, 6, −12, 24, ...

Find the missing term or terms in each geometric sequence. That is, find the GEOMETRIC MEAN.

20) ..., −1, ___, −9, ...

21) ..., 2, ___, 32, ...

22) ..., 4, ___, 16, ...

Find the missing term or terms in each geometric sequence.

23) ..., −3, ___, ___, ___, −768, ...

24) ..., 1, ___, ___, ___, 16, ...