Practice Quiz - Arithmetic and Geometric Sequences

Date_____

For each sequence, state if it is arithmetic, geometric, or neither.

1) 4, 9, 14, 19, 24, ...

2) 32, 35, 38, 41, 44, ...

3) –1, –2, –4, –8, –16, ...

4) 1, 5, 25, 125, 625, ...

Find the missing term or terms in each arithmetic sequence.

5) ..., –17, ___, –33, ...

6) ..., 25, ___, 45, ...

7) ..., –32, ___, –40, ...

8) ..., –1, ___, –21, ...

Find the missing term or terms in each geometric sequence.

9) ..., 2, ___, 32, ...

10) ..., 2, ___, 50, ...

11) ..., 3, ___, 108, ...

12) ..., –2, ___, –32, ...

Determine if the sequence is arithmetic. If it is, find the common difference, the term named in the problem, and the explicit formula.

13) 21, 11, 1, –9, ...
Find a_{25}

14) 21, 31, 41, 51, ...
Find a_{38}

Given the first term and the common difference of an arithmetic sequence find the term named in the problem and the explicit formula.

15) $a_1 = 25,\ d = 10$
Find a_{35}

16) $a_1 = 1,\ d = -10$
Find a_{25}

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, and the explicit formula.

17) 1, 5, 25, 125, ...

18) 2, –10, 50, –250, ...

Given the first term and the common ratio of a geometric sequence find the 8th term and the explicit formula.

19) $a_1 = 2,\ r = 5$

20) $a_1 = 2,\ r = 4$

Answers to Practice Quiz - Arithmetic and Geometric Sequences

1) Arithmetic
2) Arithmetic
3) Geometric
4) Geometric
5) -25
6) 35
7) -36
8) -11
9) 8
10) 10
11) 18
12) -8

13) Common Difference: $d = -10$
$a_{25} = -219$
Explicit: $a_n = 31 - 10n$

14) Common Difference: $d = 10$
$a_{38} = 391$
Explicit: $a_n = 11 + 10n$

15) $a_{35} = 365$
Explicit: $a_n = 15 + 10n$

16) $a_{25} = -239$
Explicit: $a_n = 11 - 10n$

17) Common Ratio: $r = 5$
$a_8 = 78125$
Explicit: $a_n = 5^{n-1}$

18) Common Ratio: $r = -5$
$a_8 = -156250$
Explicit: $a_n = 2 \cdot (-5)^{n-1}$

19) $a_8 = 156250$
Explicit: $a_n = 2 \cdot 5^{n-1}$

20) $a_8 = 32768$
Explicit: $a_n = 2 \cdot 4^{n-1}$