Algebra 2 Name_____

Assignment

Date_____ Period____

Determine if the sequence is arithmetic. If it is, find the common difference.

1) 31, 35, 39, 43, ...

2) 23, 123, 223, 323, ...

3) 23, 43, 63, 83, ...

4) 24, −76, −176, −276, ...

5) −21, −15, −9, −3, ...

6) −21, −121, −221, −321, ...

7) −13, −11, −9, −7, ...

8) 16, 21, 26, 31, ...

Find the common difference, the explicit formula, and the recursive formula.

9) 1, 3, 5, 7, ...

10) 25, 55, 85, 115, ...

11) −31, −1, 29, 59, ...

12) −7, 3, 13, 23, ...

13) −19, −29, −39, −49, ...

Find the 52nd term.

14) −14, −16, −18, −20, ...

15) −26, −22, −18, −14, ...

16) −39, −48, −57, −66, ...

Given the explicit formula for an arithmetic sequence find the 52nd term.

17) $a_n = 6 + (n - 1) \cdot -3$

18) $a_n = 18 + (n - 1) \cdot 200$

19) $a_n = 30 + (n - 1) \cdot -100$

Given the explicit formula for an arithmetic sequence find the term named in the problem.

20) $a_n = 22 - 9n$
Find a_{26}

21) $a_n = -18 + 7n$
Find a_{32}

Given the second term and the common difference of an arithmetic sequence find the explicit formula and the three terms in the sequence after the last one given.

22) $a_2 = -30,\ d = 6$

23) $a_2 = -4,\ d = 20$

24) $a_2 = 13,\ d = -20$

Find the missing term or terms in each arithmetic sequence.

25) ..., 35, ___, 27, ...

26) ..., 15, ___, −385, ...

27) ..., 24, ___, 44, ...

28) ..., 12, ___, ___, ___, 44, ...

29) ..., −30, ___, ___, ___, −150, ...

30) ..., −17, ___, ___, ___, 783, ...

Answers to Assignment (ID: 1)

1) $d = 4$
2) $d = 100$
3) $d = 20$
4) $d = -100$
5) $d = 6$
6) $d = -100$
7) $d = 2$
8) $d = 5$
9) Common Difference: $d = 2$
Explicit: $a_n = 1 + (n - 1) \cdot 2$
Recursive: $a_n = a_{n-1} + 2$
$a_1 = 1$
10) Common Difference: $d = 30$
Explicit: $a_n = 25 + (n - 1) \cdot 30$
Recursive: $a_n = a_{n-1} + 30$
$a_1 = 25$
11) Common Difference: $d = 30$
Explicit: $a_n = -31 + (n - 1) \cdot 30$
Recursive: $a_n = a_{n-1} + 30$
$a_1 = -31$
12) Common Difference: $d = 10$
Explicit: $a_n = -7 + (n - 1) \cdot 10$
Recursive: $a_n = a_{n-1} + 10$
$a_1 = -7$
13) Common Difference: $d = -10$
Explicit: $a_n = -19 + (n - 1) \cdot -10$
Recursive: $a_n = a_{n-1} - 10$
$a_1 = -19$
14) $a_{52} = -116$
15) $a_{52} = 178$
16) $a_{52} = -498$
17) $a_{52} = -147$
18) $a_{52} = 10218$
19) $a_{52} = -5070$
20) $a_{26} = -212$
21) $a_{32} = 206$
22) Next 3 terms: -24, -18, -12
Explicit: $a_n = -42 + 6n$
23) Next 3 terms: 16, 36, 56
Explicit: $a_n = -44 + 20n$
24) Next 3 terms: -7, -27, -47
Explicit: $a_n = 53 - 20n$
25) 31
26) -185
27) 34
28) 20, 28, 36
29) -60, -90, -120
30) 183, 383, 583