Algebra 2 Name_____

# 9.2 Arithmetic Sequences

Period____

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

1) $-28,\ -22,\ -16,\ -10, \ldots$

2) $4,\ 16,\ 36,\ 64, \ldots$

3) $25,\ 17,\ 9,\ 1, \ldots$

**Given the explicit formula for an arithmetic sequence find the first four terms and the term named in the problem.**

4) $a_n = -36 + 8n$
Find $a_{22}$

5) $a_n = 19 - 5n$
Find $a_{23}$

6) $a_n = 8 + 30n$
Find $a_{31}$

**Given the recursive formula for an arithmetic sequence find the common difference and the first five terms.**

7) $a_n = a_{n-1} - 10$
$a_1 = 18$

8) $a_n = a_{n-1} - 9$
$a_1 = 35$

9) $a_n = a_{n-1} - 6$
$a_1 = -20$

**Given the first term and the common difference of an arithmetic sequence find the explicit formula and the recursive formula.**

10) $a_1 = -2,\ d = 7$

11) $a_1 = -23,\ d = 5$

12) $a_1 = -11,\ d = 30$

**Find the common difference. Then find the explicit formula and recursive formula.**

13) 24, 20, 16, 12, ...

14) 10, 30, 50, 70, ...

15) −19, 181, 381, 581, ...

**Given a term in an arithmetic sequence and the common difference find the explicit formula and recursive formula. Hint: Begin by finding the first term.**

16) $a_{40} = 141,\ d = 3$

17) $a_{11} = 117,\ d = 9$

18) $a_{33} = 288,\ d = 8$

**Given two terms in an arithmetic sequence find the explicit formula and the recursive formula. Hint: Begin by finding the common difference and the first term.**

19) $a_{17} = -164$ and $a_{40} = -394$

20) $a_{17} = -46$ and $a_{40} = -115$

21) $a_{11} = -51$ and $a_{37} = -103$

**Find the missing term or terms in each arithmetic sequence.**

22) ..., 29, ___, 41, ...

23) ..., 27, ___, −173, ...

24) ..., 24, ___, ___, ___, 8, ...

25) ..., 14, ___, ___, ___, −22, ...