Arithmetic Sequences Worksheet

Name: Key

Period: = Date: _____

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

1) $35, 32, 29, 26, \ldots$ $d = -3$

2) $-3, -23, -43, -63, \ldots$ $d = -20$

-20 -20 -2

3) $-34, -64, -94, -124, \ldots$ $d = -30$

-30 -30 -31

4) $-30, -40, -50, -60, \ldots$ $d = -10$

-10 -10 -10

5) $-7, -9, -11, -13, \ldots$ $d = -2$

-2 -2 -2

6) $9, 14, 19, 24, \ldots$ $d = +5$

+5 +5 +5

Given the first term and the common difference of an arithmetic sequence find the first five terms and the explicit formula.

7) $a_1 = 28, d = 10$ Explicit: $a_n = 28 + (n-1)10$

$a_1 = 28$
$a_2 = 38$
$a_3 = 48$
$a_4 = 58$
$a_5 = 68$

$a_n = 28 + 10n - 10$

$a_n = 10n + 18$

8) $a_1 = -34, d = -10$ $a_n = -34 + (n-1)-10$

$a_1 = -34$
$a_2 = -44$
$a_3 = -54$
$a_4 = -64$
$a_5 = -74$

$a_n = -34 - 10n + 10$

$a_n = -10n - 24$

9) $a_1 = -38, d = -100$ $a_n = -38 + (n-1)-100$

$a_1 = -38$
$a_2 = -138$
$a_3 = -238$
$a_4 = -338$
$a_5 = -438$

$a_n = -38 - 100n + 100$

$a_n = -100n + 62$

10) $a_1 = 35, d = 4$ $a_n = 35 + (n-1)4$

$a_1 = 35$
$a_2 = 39$
$a_3 = 43$
$a_4 = 47$
$a_5 = 51$

$a_n = 35 + 4n - 4$

$a_n = 4n + 31$

Given the first term and the common difference of an arithmetic sequence find the first five terms and the recursive formula.

11) $a_1 = -26, d = 200$ $a_n = a_{n-1} + 200$

$a_1 = -26$
$a_2 = +174$
$a_3 = 374$
$a_4 = 574$
$a_5 = 774$

12) $a_1 = 39, d = -5$ $a_n = a_{n-1} - 5$

$a_1 = 39$
$a_2 = 34$
$a_3 = 29$
$a_4 = 24$
$a_5 = 19$

13) $a_1 = -9.2, d = 0.9$ $a_n = a_{n-1} + 0.9$

$a_1 = -9.2$
$a_2 = -8.3$
$a_3 = -7.4$
$a_4 = -6.5$
$a_5 = -5.6$

14) $a_1 = \frac{3}{5}, d = -\frac{1}{3}$ $a_n = a_{n-1} - \frac{1}{3}$

$a_1 = \frac{3}{5}$
$a_2 = \frac{4}{15}$
$a_3 = -\frac{1}{15}$
$a_4 = -\frac{2}{5}$
$a_5 = -\frac{11}{15}$