Arithmetic Sequences: Explicit Formula

①

n	0	1	2	3	4
a_n	7	10	13	16	19

$d = 3$ ↑ slope (m)

$y = mx + b$

$a_n = dn + a_0$ ← $a_1 - d$

② ___ 30, 34, 38, 42...

$a_1 - d$
$30 - 4 = 26$

Explicit Formula? $a_n = 4n + 26$

52nd term? $n = 52$

$a_{52} = 4(52) + 26$

$208 + 26 = \boxed{234}$

③ ___ -2, -12, -22, -32...

$a_1 - d$
$-2 - -10$
$-2 + 10$

Explicit Formula? $a_n = -10n + 8$

52nd term? $a_{52} = -10(52) + 8 = -512$

④ 40, 240, 440, 640....
(1, 2, 3, 4)

Explicit Formula? $a_n = 200n - 160$

10th term? $a_{10} = 200(10) - 160 = 1840$

Name_____

Arithmetic Sequences ; Explicit Formula

Date_____ Period____

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

1) 35, 32, 29, 26, ... -3 -3 -3 Yes, $d=-3$

2) $-3, -23, -43, -63, \ldots$

3) $-34, -64, -94, -124, \ldots$

4) $-30, -40, -50, -60, \ldots$

5) $-7, -9, -11, -13, \ldots$

6) $9, 14, 19, 24, \ldots$

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

7) $a_n = -11 + 7n$ -4 _ _ _ _

Find a_{34}

8) $a_n = 65 - 100n$

Find a_{39}

9) $a_n = -7.1 - 2.1n$

Find a_{27}

10) $a_n = \frac{11}{8} + \frac{1}{2}n$

Find a_{23}

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

11) $a_1 = 28,\ d = 10$

12) $a_1 = -38,\ d = -100$

13) $a_1 = -34,\ d = -10$

14) $a_1 = 35,\ d = 4$

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

15) $a_{38} = -53.2,\ d = -1.1$

16) $a_{40} = -1191,\ d = -30$

17) $a_{37} = 249,\ d = 8$

18) $a_{36} = -276,\ d = -7$

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

19) $a_1 = \frac{3}{5},\ d = -\frac{1}{3}$

20) $a_1 = 39,\ d = -5$

21) $a_1 = -26,\ d = 200$

22) $a_1 = -9.2,\ d = 0.9$

Given a term in an arithmetic sequence and the common difference find the recursive formula and the three terms in the sequence after the last one given.

23) $a_{21} = -1.4,\ d = 0.6$

24) $a_{22} = -44,\ d = -2$

25) $a_{18} = 27.4,\ d = 1.1$

26) $a_{12} = 28.6,\ d = 1.8$

Given two terms in an arithmetic sequence find the recursive formula.

27) $a_{18} = 3362$ and $a_{38} = 7362$

28) $a_{18} = 44.3$ and $a_{33} = 84.8$