

Arithmetic Sequences : Recursive Formula

Ex.1 $2, 6, 10, 14, \underline{18}, \underline{22}, \underline{26} \dots$

Common difference, $d, = 4$

a_1 : First Term, $a_1 = 2$ $a_5 = 18$
 ↖ say "a sub 1"

a_n : n^{th} term a_{n-1} : previous term

Ex.2 $7, 12, 17, 22, \underline{27}, \underline{32}, \underline{37}, \underline{42}, 47$

a) $d = \underline{5}$

b) $a_1 = \underline{7}$

c) $a_5 = \underline{27}$

d) IF $n=7$, what's $a_n = \underline{37}$? What's $a_{n-1} = \underline{32}$?
 ↙ 7th term

e) IF $n=9$, what's $a_n = \underline{47}$? What's $a_{n-1} = \underline{42}$?
 a_7 $a_{7-1} = a_6$
 a_9 $a_{9-1} = a_8$

Recursive Formula

$$a_n = a_{n-1} + d ; a_1 = \underline{\quad}$$

① $a_n = a_{n-1} + 3 ; a_1 = -10$

Sequence? $-10, -7, -4, -1, 2 \dots$ $d:$

② $a_n = a_{n-1} + -6 ; a_1 = 7$

Sequence? $7, 1, -5 \dots$

$\frac{3}{2} - \frac{1}{2} = \frac{2}{2} = 1$

③ $20, 18, 16, 14 \dots$

Formula? $a_n = a_{n-1} + (-2) ; a_1 = 20$

④ $\frac{1}{2}, \frac{3}{2}, \frac{5}{2}, \frac{7}{2} \dots$
 $a_n = a_{n-1} + 1 ; a_1 = \frac{1}{2}$