

Ejercicio 2

Averigua la diferencia de las siguientes progresiones aritméticas:

a) $-2, 4, 10, 16, \dots$

d) $a_n = \frac{n+1}{2}$

b) $-1, -\frac{1}{4}, \frac{1}{2}, \frac{5}{4}, \dots$

e) $a_n = -6n + 1$

c) $a_n = 4n - 5$

f) $a_n = \frac{3-n}{4}$

Solución.

a) $-2, 4, 10, 16, \dots$

$$d = a_2 - a_1 = 4 - (-2) \Rightarrow \boxed{d = 6} \rightarrow 4 + 6 = 10 \rightarrow 10 + 6 = 16$$

b) $-1, -\frac{1}{4}, \frac{1}{2}, \frac{5}{4}, \dots$

$$d = a_2 - a_1 = -\frac{1}{4} - (-1) \Rightarrow \boxed{d = \frac{3}{4}} \rightarrow -\frac{1}{4} + \frac{3}{4} = \frac{1}{2} \rightarrow \frac{1}{2} + \frac{3}{4} = \frac{5}{4}$$

c) $a_n = 4n - 5$

$$d = a_{n+1} - a_n = [4 \cdot (n+1) - 5] - (4n - 5) = 4n + 4 - 5 - 4n + 5 \Rightarrow \boxed{d = 4}$$

d) $a_n = \frac{n+1}{2}$

$$d = a_{n+1} - a_n = \frac{(n+1)+1}{2} - \frac{n+1}{2} = \frac{n+2-n-1}{2} \Rightarrow \boxed{d = 1/2}$$

e) $a_n = -6n + 1$

$$d = a_{n+1} - a_n = [-6 \cdot (n+1) + 1] - (-6n + 1) = -6n - 6 + 1 + 6n - 1 \Rightarrow \boxed{d = -6}$$

f) $a_n = \frac{3-n}{4}$

$$d = a_{n+1} - a_n = \frac{3-(n+1)}{4} - \frac{3-n}{4} = \frac{2-n-3+n}{4} \Rightarrow \boxed{d = -1/4}$$

_____ o _____