



1 Determina cuáles de las siguientes sucesiones son aritméticas. Si la sucesión es aritmética, encuentra la diferencia y el término n -ésimo para cada sucesión.

- a) 2, 7, 12, 17, 22, 27, ...
- b) 10, 4, -2, -8, -14, ...

- c) $\frac{5}{2}, \frac{11}{6}, \frac{7}{6}, \frac{1}{2}, -\frac{1}{6}, \dots$
- d) $e^1, e^2, e^3, e^4, e^5, \dots$

- e) $\frac{13}{6}, \frac{17}{12}, \frac{2}{3}, \dots$

a

$$a = 2, 7, 12, 17, 22, 27, \dots$$

$$a_n = a_1 + (n-1)d$$

b

$$a = 10, 4, -2, -8, -14, \dots$$

$$a_n = a_1 + (n-1)d$$

c

$$e = -1, -2, -3, -4, -5, \dots$$

$$e_n = e_1 + (n-1)d$$

2 Identifica cuáles sucesiones son aritméticas. Luego escribe los cinco primeros términos de aquellas que lo sean.

a) $a_n = 4 - n$

c) $\{a_n = -n + 8\}$

e) $a_n = \frac{1}{2 + \pi}$

b) $\left\{ a_n = \frac{2}{n+2} \right\}$

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

f) $a_n = -\frac{2}{3}(n-1) + 2$

a)

$$\begin{aligned} n=4-1 &= 3 \\ n=4-2 &= 2 \\ n=4-3 &= 1 \\ n=4-4 &= 0 \\ n=4-5 &= -1 \end{aligned}$$

c)

$$\begin{aligned} n=1-8 &= -7 \\ n=2-8 &= -6 \\ n=3-8 &= -5 \\ n=4-8 &= -4 \\ n=5-8 &= -3 \end{aligned}$$

(7, 6, 5, 4, 3, 2, ...)

e)

$$a = \frac{1}{2+\pi} \approx 0.14$$

t = (3, 2, 1, 0, -1)

f)

$$\begin{aligned} -0.6 \cdot (1-1) + 2 &= 2 \\ -0.6 \cdot (2-1) + 2 &= 1.4 \\ -0.6 \cdot (3-1) + 2 &= 0.8 \\ -0.6 \cdot (4-1) + 2 &= 0.2 \\ -0.6 \cdot (5-1) + 2 &= -0.4 \end{aligned}$$

b)

$$\begin{aligned} n=1+2 &= 3 \\ n=2+2 &= 4 \\ n=3+2 &= 5 \\ n=4+2 &= 6 \\ n=5+2 &= 7 \end{aligned}$$

d)

$$\begin{aligned} n=1+\frac{\pi}{2} &= 2.57 \\ n=2+\frac{\pi}{2} &= 3.57 \\ n=3+\frac{\pi}{2} &= 4.57 \\ n=4+\frac{\pi}{2} &= 5.57 \\ n=5+\frac{\pi}{2} &= 6.57 \end{aligned}$$

$\left\{ \frac{2}{3}, \frac{2}{4}, \frac{2}{5}, \frac{2}{6}, \frac{2}{7} \right\}$

(2.57, 3.57, 4.57, 5.57, 6.57)

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a) $\frac{1}{2 \cdot 1} + \frac{1}{2 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{2 \cdot 4} + \frac{1}{2 \cdot 5} + \frac{1}{2 \cdot 6}$

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{6} + \frac{1}{8} + \frac{1}{10} + \frac{1}{12}$$

$$R = \frac{1}{42}$$

b) $\frac{1}{n^2-1}, \frac{1}{2^2-1}, \frac{1}{3^2-1}, \frac{1}{4^2-1}, \frac{1}{5^2-1}, \frac{1}{6^2-1}$

$$\frac{1}{7^2-1}, \frac{1}{8^2-1}, \frac{1}{9^2-1}, \frac{1}{10^2-1}$$

$$\frac{1}{3}, \frac{1}{5}, \frac{1}{7}, \frac{1}{9}, \frac{1}{11}$$

$$\frac{1}{13}, \frac{1}{15}, \frac{1}{17}, \frac{1}{19}$$

$$R = \frac{1}{99}$$

c)

d) 6

$$e) \frac{2}{1} \frac{5}{2} \frac{8}{3} \frac{11}{4} \frac{14}{5} \frac{18}{6} \frac{20}{7} \frac{23}{8} \frac{26}{9}$$

$$f) 1 + \frac{4}{49} + \frac{8}{343} + \frac{16}{2401} + \frac{32}{16807}$$

$$h) 3+4 + \frac{125}{27} + \frac{81}{16} + \frac{49}{25} + \frac{4096}{729} + 5 \cdot 8$$

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$$a) 4, 20, 100, 500, 2500$$

$$b) \frac{1}{6}, \frac{1}{24}, \frac{1}{60}, \frac{1}{120}, \frac{1}{210}$$

$$c) 1, 4, 12, 32, 80$$

$$e) 2, 12, 30, 56, 90$$