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$$\underline{\lambda = 1}$$

$$2x-1, 2x+1, 2x, \dots$$

(5)

$$d: 2x-1 \rightarrow 2x+1 = 2$$

$$d: 4x-2x+1 = 2x+1 = 2 \Rightarrow 2x=2 \rightarrow x=\frac{1}{2}$$

$$\xrightarrow{\text{النوع}} -2, 0, 2, \dots \quad a_n = 2n-2$$

$$a_f = 2 \times f - 2 = 4$$

$$a_n = 2, 4, 6, 8, 10, \dots \quad b_n = 1, 3, 5, 7, 9, \dots$$

(6)

$$2 \times 2 = 4 \rightarrow \text{قديري}$$

$$a_{2n} \Rightarrow 2n+1 \rightarrow 2 \times 2n+1 = 4n+1$$

$$b_{2n} \Rightarrow 2n-1 \rightarrow 2 \times 2n-1 = 4n-1$$

$$4n-1 \neq 4n+1$$

$$4n < 4n+1$$

$$n < \frac{1}{2}$$

نقطة تقاطع

$$a_1 + a_2 + a_3 = 21$$

$$a_1 + a_3 + a_5 = 10$$

$$a_3 - a_2 + a_1 = 9a_1$$

$$\cancel{a_1} + \cancel{a_2} + \cancel{a_3} = \dots$$

$$a_5 - a_2 = 10 - 21 = -11$$

$$\hookrightarrow \cancel{a_1} + \cancel{a_2} - \cancel{a_1} - \cancel{a_2} = 3d = -11$$

$$d = -\frac{11}{3}$$

(7)

$$\rightarrow a_1 + a_2 + a_3 = 21 \Rightarrow a_1 + a_1 + d + a_1 + 2d = 21$$

$$3a_1 + 3d = 21 \rightarrow 3(a_1 + d) = 21$$

$$a_1 + d = 7 \rightarrow a_1 + 2n = 7 \Rightarrow a_1 = 7 - 2n$$

$$\cancel{a_1} + \cancel{a_2} - \cancel{a_1} - \cancel{a_2} + a_1 = a_1 + d \Rightarrow 2n - 21 = 7$$

$$\frac{a_3 - a_2 + a_1}{a_1} = \frac{7}{-21} = -\frac{1}{3}$$

(8)

$$x-y, x, x+y, x+y, x+y \rightarrow x-y + x + x + x = 10$$

$$\begin{matrix} \textcircled{1} & \textcircled{2} & \textcircled{3} & \textcircled{4} & \textcircled{5} \\ 1 & 5 & 8 & 11 & 14 \end{matrix}$$

$$3x = 10$$

$$x = \frac{10}{3}$$

• dot note

$$x + y + x + y = 20 \rightarrow 2x + 2y = 20$$

$$\hookrightarrow a_n: 2n-1 \rightarrow a_1 \Rightarrow 2 \times 1 - 1 = 1$$

$$2x = 10$$

$$x = 5$$

$$S_9 = 9 S_3 \rightarrow S_n = \frac{n}{2} (a_1 + a_n) \Rightarrow \quad (9)$$

$$\cancel{\frac{9}{2}} (a_1 + a_{10}) = \cancel{\frac{9}{2}} \times \cancel{\frac{18}{2}} (a_1 + a_4 + 3d)$$

$$2a_1 + 9d = 9a_1 + 12d$$

$$7d = 8a_1$$

$$d = \frac{8a_1}{7}$$

$$\frac{a_7}{a_4} = \frac{a_1 + 6d}{a_1 + 3d} = \frac{a_1 + 6 \times \frac{8a_1}{7}}{a_1 + 3 \times \frac{8a_1}{7}} = \frac{a_1 + \frac{48a_1}{7}}{a_1 + \frac{24a_1}{7}} = \frac{\frac{55a_1}{7}}{\frac{29a_1}{7}} = \frac{55}{29}$$

11, 13, 15

$$\begin{array}{ccc} \text{11} & 13 & 15 \\ (1) & (3) & (5) \end{array} \rightarrow \begin{array}{l} 2v = a_1 + 4d \\ 15 = 11 + 4d \end{array} \quad (10)$$

$$4d = 4 \Rightarrow a_1 + 3d = 11 + 3 \times 1 = 14 \quad (13)$$

$$2F = 4d$$

$$\boxed{d = F}$$

$$\begin{array}{ccc} 13n & 13 & 13 \\ (1) & (F) & (n) = 9 \end{array}$$

$$\rightarrow a_F = a_1 + 3d \rightarrow 13n + 3d = 13$$

$$3d = 13 - 13n$$

$$d = \frac{13(1-n)}{3}$$

$$\frac{a_n - a_1}{n-1} = d$$

$$\frac{13 - 13n}{n-1} = \frac{13(1-n)}{n-1} = -13$$

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$$\Rightarrow \frac{n-1}{n-1} = 1$$