

$$a_n = 12n + 1 \quad (\text{الف} \Rightarrow a_n = d + (n-1)d)$$

(۲)

$$\text{ب) } 4a_{10} = 4(120) + 1 = 481$$

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$$\text{الف) } a_n = 12n + 1 \quad \text{مجموعه: } \frac{n}{2} (2a_1 + (n-1)d) \quad S_1 = \frac{1}{2} (2 \times 1 + (9) \times 12) = 54$$

$$\text{ب) } S = \frac{1}{2} (a_{19} + a_{32}) = \frac{1}{2} (118 + 130) = 124$$

(۳)

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$$2 - 1 - \sqrt{3} = 1 - \sqrt{3} = d$$

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

$$a_{22} = (1 - \sqrt{3})22 + 2\sqrt{3} =$$

$$22 - 22\sqrt{3} + 2\sqrt{3} = 22 - 20\sqrt{3}$$

$$a_{25} = (1 - \sqrt{3})25 + 2\sqrt{3} =$$

$$25 - 25\sqrt{3} + 2\sqrt{3} = 25 - 23\sqrt{3}$$

$$\text{① } a_{25} - a_{22} = 25 - 23\sqrt{3} - (22 - 20\sqrt{3}) = 25 - 23\sqrt{3} - 22 + 20\sqrt{3} = 3 - 3\sqrt{3}$$

$$\text{② } a_{25} - a_{22} = 3d = 3(1 - \sqrt{3}) = 3 - 3\sqrt{3}$$

(۴)

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$$\text{① } x^m, x^m \Delta y \Rightarrow x \Delta^m = \frac{\Delta^m + \Delta y}{2} \Rightarrow x \Delta^m = \Delta^m + \Delta y \Rightarrow \Delta y = \Delta^m \times \Delta \Rightarrow \Delta^{m+1}$$

$$\text{② } x, y \Rightarrow x + y = k$$

$$\Rightarrow y = k - x$$

$$\Rightarrow m + (m+1) = k \Rightarrow m+1 = k \Rightarrow m = k - 1 = 3 - 1 = 2$$

$$xy = 1 \times 3 = 3$$

(۵)

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$$r_{m-1} - r_{m+1} = 3$$

$$r_m - r_{m+1} = r_{m+1}$$

$$\left\{ \begin{array}{l} r_{m+1} = 3 \\ m = \frac{1}{2} \end{array} \right.$$

(۶)

$$\text{دنباله: } -3, 0, 3, 4$$

$$+3 \quad +3 \quad +3$$

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$$a_n \rightarrow d=1, a_1=1$$

$$b_n \rightarrow d=1, a_1=1$$

$$a_{10} = 1 + 19 \times 1 = 20$$

$$b_{10} = 1 + 19 \times 1 = 20$$

$$1, 11, 19, \dots \rightarrow a_n = 1 + (n-1) \times 10$$

$$1 + 10(n-1) \leq 100$$

$$10n - 9 \leq 99$$

$$10n \leq 108$$

$$n \leq 10.8 \rightarrow n=10$$

$$a_1 + d + a_2 + d = 10 \quad r_{a_2} = 1$$

$$a_1 + d + a_2 + d + a_3 + d = 10 \quad r_{a_3} = 1, d$$

$$r_{a_3} = 1, d = 1 \quad d = 1$$

$$a_1 + d = (a_1 + d) + a_1$$

$$a_1 + d + a_1 = a_1 + d = -1 + 1 = 0 \quad 1 - 1 = 0 \quad a_1 = -1$$

$$a_1 = -1 \quad \frac{1}{-1} = -1$$

$$a_1 + a_2 + a_3 = 10 \quad r_{a_2} = 1, d \quad a_3 = d$$

$$a_1 + a_2 = 10$$

$$a_1 + d + a_2 + d = 10$$

$$r_{a_2} + d = 10$$

$$1. \quad d = 1, d = 1$$

$$S_9 = \frac{9}{2} (1 + 10) \quad S_{10} = \frac{10}{2} (1 + 10)$$

$$\frac{9}{2} (1 + 10) = 9 \times \frac{10}{2} (1 + 10) \rightarrow 1 + 10 = 10 (1 + 10)$$

$$1 + 10 = 10 + 10 \Rightarrow 10 = 10 + 10 \Rightarrow 10 = 10$$

$$a_n = a + (n-1)d \quad a_{10} = a_1 + 19d \rightarrow a + 19a = 19a$$

$$a_{10} = a + 19(10) = 19a$$

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