

$$d = 9 - 5 = 4$$

$$a_1 = 4 \times 1 + b = 5 \Rightarrow b = 1$$

$$a_n = 4n + 1 \quad \text{الف}$$

$$a_{10} = 4 \times 10 + 1 = \textcircled{41}$$

$$d = 10 - 9 = 1$$

$$a_1 = 4 \times 1 + b = 9 \Rightarrow b = 5$$

$$S_n = \frac{n}{2} (2a_1 + (n-1)d)$$

$$S_{10} = \frac{10}{2} (2 \times 9 + (10-1) \times 1) \quad \text{الف}$$

$$S_{10} = 10 \times 9 + 45 = 135 \quad \text{ب}$$

$$\Rightarrow \frac{10}{2} (2 \times (4 \times 9 + 5) + 9 \times 1) = 135$$

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

$$a_1 = 1 - \sqrt{3} + b = 1 + \sqrt{3}$$

$$\Rightarrow b = 2\sqrt{3}$$

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

$$a_{10} - a_{13} = 10 + 10\sqrt{3} + 2\sqrt{3} - (13 + 13\sqrt{3} + 2\sqrt{3})$$

$$= \boxed{2 + 2\sqrt{3}}$$

$$\text{الف) } a^{2m} \times a^{2m} \times a^2 \Rightarrow a^{2m+1} \times a^2 = a^{2m+3} \Rightarrow m = \frac{2-1}{2} = \frac{1}{2}$$

$$\text{ب) } n + 2 = 2 \times 2$$

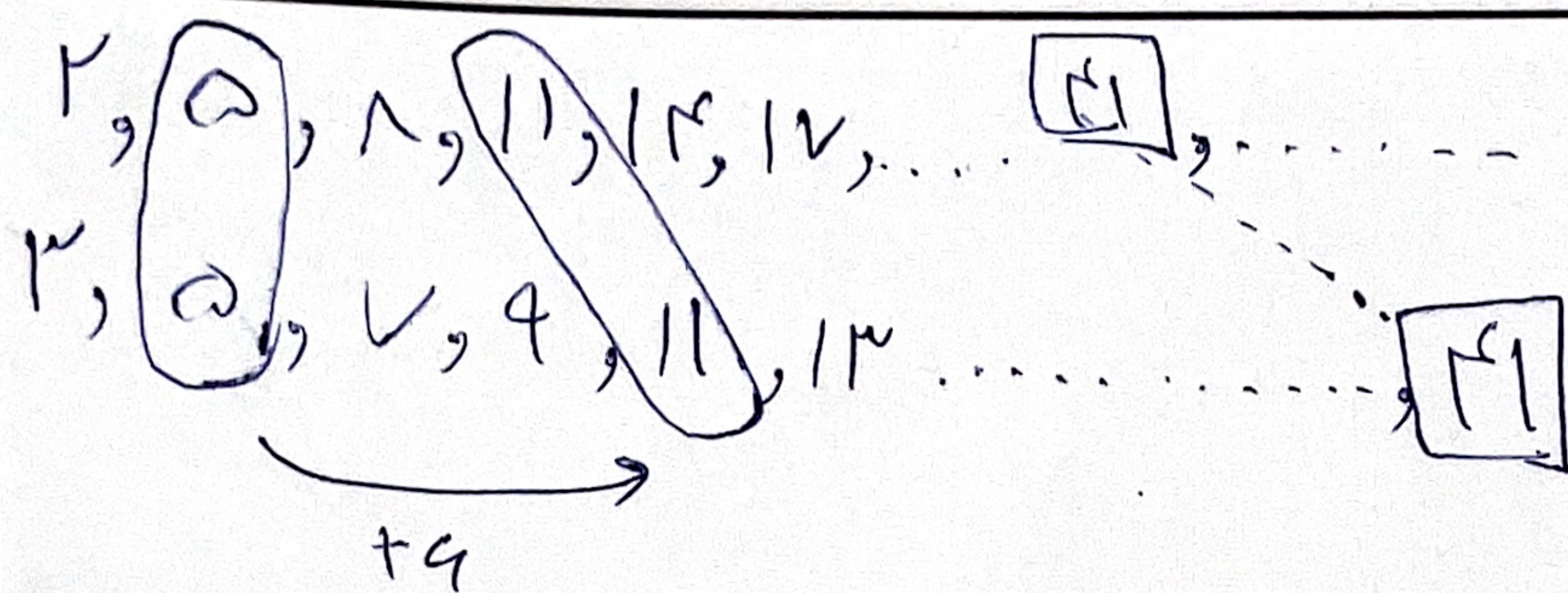
$$n = 2 - 2, 2 = 2 - n \Rightarrow ny = 19 - 10m - 4y + 19$$

$$\Rightarrow ny = \frac{2ny - 10m + 2 - 19}{2}$$

$$d = 10 - 1 - 10 + 1 = 0 = 9n - 10 + 1 \Rightarrow n = 0$$

$$\Rightarrow -1, 0, 1 \Rightarrow a_1 = 1 + b = -1 \Rightarrow b = -2$$

$$\Rightarrow a_n = 1n - 2 \Rightarrow a_5 = (1 \times 5) - 2 = \textcircled{3}$$



(LV)

$$q_n - 1 = 1 \Rightarrow q_n = 2 \Rightarrow n = V$$

$$\begin{aligned} q_1 + a_p + a_q &= p_{a_1} + p_d = 1 \\ a_1 + a_p + a_d &= p_{a_1} + q_d = 1 \end{aligned} \Rightarrow \begin{aligned} p_d &= 1 \\ d &= 1 \end{aligned}$$

$$\Rightarrow p_{a_1} + 1 = 1 \Rightarrow a_1 = 0$$

$$a_p - a_p + a_1 = p_{a_1} + d = -1 + 1 = 0$$

$$\frac{-1}{a} = \frac{-1}{-1} = 1$$

$$a_1 + a_p + a_q = p_{a_1} + p_d = 1 \Rightarrow a_1 + d = 1 \Rightarrow p_{a_1} + p_d = 1$$

$$a_p + a_d = p_{a_1} + Vd = 1$$

$$\Rightarrow d = 1 \Rightarrow d = 1 \Rightarrow p_{a_1} + q = 1 \Rightarrow a_1 = 1$$

$$\Rightarrow a_n = p_n - 1 \Rightarrow a_1 = p_1 - 1 = 0$$

$$2q = \frac{4}{p} (p_{a_1} + 1d) = 4 \times \frac{1}{p} (p_{a_1} + 1d)$$

$$\Rightarrow 4a_1 + 4d = 4p_{a_1} + 4Vd \Rightarrow 1a_1 = 4d \Rightarrow p_{a_1} = d$$

$$\Rightarrow a_n = p_{a_1} - a_1 \Rightarrow \frac{p_{a_1}}{1p_{a_1}} = 1$$

$$d = \frac{p_d - 1}{V - 1} = 1 \Rightarrow a_n = p_n + V$$

(LV)

$$a_p = 1 \Rightarrow p_1, 0, 0, 1 \Rightarrow d' = \frac{p_1 - p}{p+1} = 0$$

$$\Rightarrow p_1, p_2, p_3, p_4, 1, 1$$