

$$1, \{2, 4, 8\}$$

$$\{2^0, \dots, 2^k\}$$

استه

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$$\text{واسطه حسابی} = \frac{1 + 2^k}{2} = 2^{\frac{k+1}{2}}$$

۹۵ همتی

$$\{1, 2, 3\}, \{4, 5, 6, 7, 8, 9, 10, 11, 12\}$$

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$$1 \times 3 \quad 4 \times 3 \quad 12 \times 3 \quad 40 \times 3 \quad \left. \begin{array}{l} 121 \times 3 \\ \text{عدا اول} = 121 \\ \text{عدا آخر} = 121 \end{array} \right\} \rightarrow \text{میان} = \frac{121 + 121}{2} = \frac{242}{2} = 121$$

$$2^k : n = 3k \sim n = 3, 6, 9, 12, \dots \quad k = 1, 2, 3, \dots$$

$$-2k+2 : n = 3k+1 \rightarrow n = 1, 4, 7, 10, \dots \quad k = 0, 1, 2, 3, \dots$$

$$\left[\frac{n}{k+1} \right] + a : n = 3k+2 \rightarrow n = 2, 5, 8, 11, \dots \quad k = 0, 1, 2, 3, \dots$$

$$n=1 \rightarrow k=0 \rightarrow a_1 = \varepsilon / n=2 \rightarrow k=0 \rightarrow a_2 = \left[\frac{2}{2} \right] + a = 1 + a / n=3 \rightarrow a_3 = 2^1 = 2$$

$$n=4 \rightarrow k=1 \rightarrow a_4 = 2 / n=5 \rightarrow k=1 \rightarrow a_5 = \left[\frac{5}{2} \right] + a = 1 + a / n=6 \rightarrow k=2 \rightarrow a_6 = 2^2 = 4$$

$$n=7 \rightarrow k=2 \rightarrow a_7 = 0 / n=8 \rightarrow k=2 \rightarrow a_8 = \left[\frac{8}{2} \right] + a = 2 + a / n=9 \rightarrow k=2 \rightarrow a_9 = 2^3 = 8$$

$$a_1 + a_2 + \dots + a_9 = 1 + \varepsilon + 1 + a + 2 + 2 + 1 + a + 4 + 0 + 2 + a + 8 = 22 + 2a = 19 \rightarrow 2a = -3 \rightarrow a = -1.5$$

$$a_1 + a_2 + a_3 + \dots + a_{19} = 1 + a + 1 + a + 1(2 + a) = 11 + 10a = 11 - 15 = -4$$

$$\left\{ \left[\frac{3k+2}{k+1} \right] = \left[\frac{k+2}{k+1} + \frac{2k}{k+1} \right] = \left[1 + \frac{2k}{k+1} \right] = 1 + \left[\frac{2k}{k+1} \right] \rightarrow \left[\frac{2k}{k+1} \right] \rightarrow \frac{2k}{k+1} \geq 0 \right.$$

$$\frac{2k+2}{k+1} = \begin{cases} 1+0=1 & n=1, n=0 \\ 1+1=2 & n=2, n=1 \end{cases}$$

$$\left\{ \begin{array}{l} n=2, n=1 \\ n=1, 2, \dots \end{array} \right\} \quad \frac{2k}{k+1} \geq 1 \rightarrow 2k \geq k+1 \quad 2k \geq 0$$

$$k \geq 1 \quad k \geq 0$$

$$\frac{2k}{k+1} \geq 1 \rightarrow 2k \geq 2k+2$$

$$0 \geq 2 \rightarrow \text{مقدار صحت ندارد}$$

$$Q_{\omega} = 12$$

$$a_v = 14,5$$

$$a = \frac{1}{v} \times (-12) = -\frac{12}{v} \rightarrow a_{\omega} = -\frac{12}{v} = r a + \omega b + c = 12$$

-3

$$a_n = -\frac{1}{\omega} n^r + \epsilon n - 1 \quad \leftarrow \begin{array}{l} -a + \omega b + c = 12 \\ \omega b + c = 19 \end{array}$$

$$a_v = -\frac{1}{\omega} \times 19 + v b + c = 14,5 \rightarrow -9,1 + v b + c = 14,5 \rightarrow v b + c = 23,6$$

$$\omega b + c = 19$$

$$v b + c - \omega b - c = 23,6 - 19 \rightarrow v b - \omega b = 4,6 \rightarrow b = 2 \rightarrow a(2) + c = 19 \rightarrow c = -1$$

$$\frac{a_{10}}{a_1} = \frac{-\frac{1}{\omega} \times 10^r + 10 \times 2 - 1}{-\frac{1}{\omega} \times 1^r + 1 \times 2 - 1}$$

$$= \frac{12}{\frac{12}{\omega}} = \omega$$

$$a_f = t_f$$

$$a_n = t_v$$

$$t_{10} = 0$$

$$a_f + \epsilon d = t_f + \omega d' \rightarrow \epsilon d = \omega d'$$

-2

$$t_{10} = t_{10} + \omega d' \cdot 0 + \omega d' = \omega d' \rightarrow \frac{a_{10}}{d} = \frac{\omega d'}{d} = \frac{\epsilon d}{\epsilon} = \epsilon$$

$$\epsilon a_f^r = \omega a_f a + r a_f a \rightarrow \epsilon a_f^r - r a_f a = \omega a_f a \rightarrow r a_f (r a_f - a) = \omega a_f a \xrightarrow{a_f = a_1 + r d} \frac{a_f = a_1 + r d}{a_f = a_1 + r d}$$

-4

$$r a_f (a_1 + r d) = \omega (a_1 + r d) a_1$$

$$\frac{a_f}{d} = \frac{a_1 + r d}{d} \quad \left\{ \begin{array}{l} a_1 = -r d \\ \frac{r d - r d}{d} = 1 \end{array} \right. \quad \left\{ \begin{array}{l} a_1 + r a_1 = \frac{r - q}{r} = \frac{1}{r} \end{array} \right.$$

$$r a_f = \omega a_1 \rightarrow r (a_1 + r d) = \omega a_1$$

$$r a_1 + r^2 d = \omega a_1 \rightarrow r d = \frac{\omega - r}{r} a_1$$

$$a_1 + r d = 0 \rightarrow a_1 = -r d$$

$$(c, b, a) \text{ (معدلة)} \rightarrow b = c + d, a = c + r d$$

$$c + d, \frac{q^r}{\epsilon} = \frac{\epsilon q^r}{\epsilon} = c + d$$

-2

$$\frac{c}{\epsilon}, \frac{a}{\epsilon} \text{ (معدلة)} \rightarrow \frac{a}{\epsilon} = \frac{c}{\epsilon} \times q, b = \frac{c}{\epsilon} \times q^r$$

$$c \left(\frac{q^r}{\epsilon} - 1 \right) = d$$

$$c + r d = \frac{c}{\epsilon} \times q^r \rightarrow c + r d = \frac{c d}{r} - \frac{c q}{r} - c + r d \rightarrow c \left(\frac{q}{r} - 1 \right) = r d \rightarrow \frac{\left(\frac{q}{r} - 1 \right)}{\left(\frac{q^r}{\epsilon} - 1 \right)} = \frac{r d}{d}$$

$$\frac{1}{\frac{q}{r} - 1} = r \rightarrow 1 - q + r = q^r - 1 \rightarrow r a = -r$$

$$(b, a) \text{ (معدلة)} \rightarrow b = c q, a = c q^r$$

$$c + r d = r c q - c = r d - c(r q - 1) = r d$$

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$$(r a, r b) \text{ (معدلة)} \rightarrow r a = c + d, r b = c + r d$$

$$r q^r = c + d = r c q^r - c = d \rightarrow c(r q^r - 1) = d$$

$$\frac{c(r q - 1)}{c(r q^r - 1)} = \frac{r d}{d} = r \rightarrow \epsilon q^r - r = q - 1$$

$$\epsilon q^r - r q - 1 = 0 \rightarrow \Delta = 9 + 14 = 23$$

$$q^r = -\frac{1}{q^2}$$

$$q = \frac{r \pm \sqrt{\Delta}}{2} = \frac{1 \pm \sqrt{23}}{2} \rightarrow q = -\frac{1}{\epsilon}$$

$$\frac{a_r}{(a_r)^2} + \frac{a_r}{a^r} = r \rightarrow \frac{a_1 q^r}{a_1^r q^r} = \frac{a q}{a_1^r} \rightarrow \frac{a^r}{a^r} + \frac{q}{a} = r \rightarrow \frac{a^r}{a_1^r} + \frac{q}{a_1} = r \dots$$

$$\frac{a^r}{a_1^r} = \frac{a_1^r}{a_1 q} = \frac{a_1}{a} \quad \leftarrow \frac{q}{a} = 1 \quad \underline{\underline{(-r)}} \quad \left(\frac{q}{a} + r \right) \left(\frac{q}{a} - 1 \right) = 0$$

$$\underline{\underline{\frac{1}{r} = 1 \quad \underline{\underline{-1}}}}$$

$$a_r^r = a_2, \quad a_0 = rv \quad a_r^r = a_1 q \rightarrow a_r = q$$

$$a_0 = \frac{rv}{a_0} = \frac{rv}{q} \rightarrow a^r \rightarrow rv = q^r \rightarrow q = r \quad q_1 = a_0 = \frac{rv}{a_2} = \frac{rv}{r^2} = \frac{rv}{11} = \frac{1}{r}$$

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