

۳/۵

Subject

Page

Month

Date



آبیت (B) (م)

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

۲

$$9 \times 1 = 9 \text{ دایره}$$

$$\frac{1 \times 9}{9} = 1$$

$$\frac{a_{min} + a_{max}}{r}, \frac{a + r a}{r} = \frac{r a}{r}$$

۲

$$r + k r = a_n$$

۳

$$k r = n$$

$$a_1 = 1$$

$$r = 2$$

$$a_v - a_w = (a_v - a_y) + (a_y - a_w)$$

$$14 - 18 = 4$$

۵

$$r + r a + a_{n+1} = 9 a_1$$

۹

$$b = r$$

$$a + b = b, b = a c$$

$$\frac{a + c}{r} = a c$$

$$a^r + r a c + c^r = 9 a c$$

$$a^r - r a c + c^r = 0 \rightarrow a = c$$

$$\frac{b}{a} = \frac{c}{a} = r$$

$$r = \frac{b}{a}$$

$$\frac{a_3}{a_4} = r$$

۹

$$r = \frac{a_3}{(a_4)^r} + \frac{a}{(a_4)^r}$$

$$a < \frac{1}{r} a_1 \rightarrow 0.159 a_1$$

۲

$$\{1, 2, 3\}, \{4, 5, 6, \dots, 12\}, \{13, 14, \dots, 39\}, \{40, 41, \dots, 120\}$$

$$\boxed{\text{دسته نهم}} \rightarrow \{121, 122, \dots, 343\}$$

$$\text{میانین طبقات} \rightarrow \bar{x} = \frac{121 + 343}{2} = \frac{464}{2} = \boxed{232}$$

* طبقات دسته نهم دنباله ای صافی با قدر نسبت 1 هستند پس میانین با میانین صعب اول و آخر برابری میکنند!

۳

$$a_0, a_3, a_4, a_9 \rightarrow (2^k) \text{ ضابطی اول}$$

$$a_1, a_5, a_7 \rightarrow (-2k+6) \text{ ضابطی دوم}$$

$$a_2, a_6, a_8 \rightarrow \left[\frac{n}{k+2}\right] + a$$

$$a_2 = \left[\frac{2}{2}\right] + a$$

$$a_2 = a + 1$$

$$a_5 = \left[\frac{5}{2}\right] + a$$

$$a_5 = a + 1$$

$$a_8 = \left[\frac{8}{2}\right] + a$$

$$a_8 = a + 2$$

$a_0 = 2^0$ $a_0 = 1$	$a_3 = 2^1$ $a_3 = 2$	$a_4 = 2^2$ $a_4 = 4$	$a_9 = 2^3$ $a_9 = 8$
--------------------------	--------------------------	--------------------------	--------------------------

$a_1 = -2(0) + 6$ $a_1 = 6$	$a_5 = -2(1) + 6$ $a_5 = 4$	$a_7 = -2(2) + 6$ $a_7 = 2$
--------------------------------	--------------------------------	--------------------------------

$$S_{10} = 1 + 4 + a_2 + 2 + 2 + a_5 + 4 + 0 + a_8 + 8 = 19$$

$$a_2 + a_5 + a_8 = -2 \rightarrow 3a + 4 = -2 \rightarrow \boxed{a = -2}$$

$$a_n = \left[\frac{2^{k+2}}{k+2}\right] + (-2)$$

مجموع طبقات $a_2 + a_5 + \dots$ از ضابطی سوم بدست می آید

$$a_n = \left[\frac{2k+4 + k-2}{k+2}\right] - 2 = \left[2 + \frac{k-2}{k+2}\right] - 2 = \boxed{\left[\frac{k+2}{k-2}\right]}$$

عبارت $\left[\frac{k+2}{k-2}\right]$ به ازای $k=0$ و $k=1$ برابر 1- است و به ازای سایر مقادیر k برابر 0 است پس داریم:

$$S = a_2 + a_5 + a_8 + \dots + a_{24}$$

$$S = (-1) + (-1) + 0 + \dots + 0 = \boxed{-2}$$

$$tn = an^r + bn + c \rightarrow t\omega = 2\omega a + \omega b + c = 14 \quad \text{جواب} \rightarrow 14a + b = 1,4$$

$$\rightarrow tv = 4a + vb + c = 14,4$$

$$a = \frac{-1}{v} (-t\omega) = \frac{1}{v} (-14) = -\frac{1}{2} \rightarrow 14(-\frac{1}{2}) + b = 1,4 \rightarrow$$

$$a = -\frac{1}{2} \text{ و } b = 4$$

$$b = 4$$

$$t\omega = -14 \rightarrow 2\omega(-\frac{1}{2}) + 4(\omega) + c = 14 \rightarrow c = -1$$

$$t\omega = 1\omega^r(-\frac{1}{2}) + 1\omega(4) - 1 = 14$$

$$t_1 = -\frac{1}{2}(1)^r + 4(1) - 1 = 2,8 \rightarrow \frac{t\omega}{t_1} = \frac{14}{2,8} = \boxed{\omega}$$

دنباره صبی $a_n = a_1 + (n-1)d$ و دنباره ضریبی $bn \leq cn + k$ ۱

$$\begin{aligned} a_k &= br \rightarrow a_1 + kd = br \\ a_n &= bv \rightarrow a_1 + vd = bv \end{aligned} \rightarrow kd = \frac{bv - br}{v - r} \rightarrow \boxed{kd = \omega c}$$

$$b_1 = 0 \rightarrow 1 \cdot c + k = 0 \rightarrow \boxed{k = -1 \cdot c}$$

$$\frac{b_1 \omega}{d} = \frac{1 \cdot c + k}{d} = \frac{1 \cdot c - 1 \cdot c}{d} = \frac{\omega c}{d} = \frac{kd}{d} = \boxed{k}$$

$$4(a+d)^r = \omega a(a+vd) + 4a(a+d)$$

$$4a^r + 4d^r + 4ad = 1a^r + 1\omega ad$$

$$4a^r + 4d^r - 4d^r = 0 \rightarrow a = \frac{\pm d + \sqrt{d^r - 4(r)(-4d^r)}}{4} = \frac{-d \pm vd}{4} \rightarrow a = -\frac{vd}{4}$$

$$1 \rightarrow \frac{a \cdot 4}{d} = \frac{-\frac{vd}{4} + \frac{vd}{4}}{d} = 1 \checkmark$$

$$2 \rightarrow \frac{a \cdot 4}{d} = \frac{\frac{vd}{4} + \frac{vd}{4}}{d} = \frac{2d}{d} = 2, \omega \checkmark$$

$$a, b, c \xrightarrow{\text{طبی}} b = \frac{a+c}{2} \rightarrow a = 2b - c$$

$$b, \frac{a}{\epsilon}, \frac{c}{\epsilon} \xrightarrow{\text{هندس}} \frac{a^r}{\epsilon} = \frac{b^r}{\epsilon} \rightarrow a^r = b^r c \rightarrow bc = (2b-c)^r$$

$$\epsilon b^r + c^r - \epsilon bc = b^r c \rightarrow \epsilon b^r - \epsilon bc + c^r = 0 \quad (b-c)(\epsilon b - c) = 0$$

$$b=c \rightarrow \text{غیر قوی! صیانت متناهی!}$$

$$\epsilon b = c \rightarrow \text{قوی} \checkmark \rightarrow \frac{a + \epsilon b}{2} = b \rightarrow a = -2b$$

$$\text{دنباله} \rightarrow b, \frac{a}{2}, \frac{c}{2} \rightarrow b, -b, b \rightarrow q = -1$$

$$2q = -2$$

$$\text{دنباله منتهی} \rightarrow a, aq, aq^r \quad (a, b, c)$$

$$\text{دنباله منتهی} \rightarrow \epsilon aq, \epsilon a, aq^r \quad (\epsilon b, \epsilon a, c)$$

$$\text{واسطی}, \epsilon aq + aq^r = \epsilon a \xrightarrow{\div a} \epsilon q + q^r = \epsilon \quad \rightarrow q = 1 \quad \times \quad \text{حیانت متناهی}$$

$$\hookrightarrow q = -\epsilon \quad \checkmark$$

$$q = -\epsilon \rightarrow \frac{aq}{a^r} = \frac{aq^r}{a^r q^r} = q^r = (-\epsilon)^r = -\epsilon$$

$$\frac{aq^r}{(aq)^r} = \frac{a \times q^r}{a^r \times q^r} = \frac{q^r}{a^r} \quad \left. \begin{array}{l} \frac{aq^r}{a^r} \\ \frac{aq}{a^r} = \frac{q}{a} \end{array} \right\} \rightarrow \left(\frac{q}{a}\right)^r + \frac{q}{a} - 2 = 0$$

$$\left(\frac{q}{a} + 1\right)\left(\frac{q}{a} - 1\right) = 0 \quad \rightarrow \frac{q}{a} = 1 \rightarrow \frac{a}{q} = 1 \quad \checkmark$$

$$\hookrightarrow \frac{q}{a} = -2 \rightarrow \frac{a}{q} = -\frac{1}{2} \quad \checkmark$$

$$a^{\mu} = \sqrt{a^{\nu}} \rightarrow (a q^{\mu}_{\nu}) = a q^{\mu}_{\nu} \rightarrow a q^{\mu}_{\nu} = a q^{\mu}_{\nu} \rightarrow \underline{a q = 1} \quad \underline{10}$$

$$a \omega = r \nu \rightarrow a q^{\mu}_{\nu} r \nu \rightarrow (\cancel{a} q^{\mu}_{\nu}) q^{\mu}_{\nu} r \nu \rightarrow q^{\mu}_{\nu} r \nu \rightarrow \underline{q = r} \quad \underline{a = \frac{1}{r}}$$

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