

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱۷۰... کلاس: پنجم دبستان دخترانه.....

$\{13, \{2, 3, 4, 5, 6, 7, 8, 9\}, \{10, \dots\}$
 $عمر آقا \rightarrow 1, 4, 9, 16 \rightarrow n^2 \rightarrow 9^2 = 81$
 $عمر مادر \rightarrow \begin{matrix} 1 & 2 & 3 & 4 & 5 \\ -1 & -1 & -1 & -1 & -1 \end{matrix} \rightarrow \begin{matrix} a=1 \\ c=2 \end{matrix} \quad \begin{matrix} an^2+bn+c \\ n^2+bn+2 \end{matrix} \xrightarrow{n=1} 1+b+2=1 \rightarrow b=-2$
 $n=9 \rightarrow 9^2 - 2 \times 9 + 2 = 81 - 18 + 2 = 65$
 $45, 81, 11 \rightarrow \frac{11+45}{2} = 28$

$(1, 2, 3), (4, 5, 6, 7, 8, 9, 10, 11, 12)$
 $3 \text{ شروع رسته} \rightarrow 13 \quad 3 \text{ پایان رسته} \rightarrow 39$
 $4 \text{ شروع رسته} \rightarrow 40 \quad 4 \text{ پایان رسته} \rightarrow 120$
 $5 \text{ شروع رسته} \rightarrow 121 \quad 5 \text{ پایان رسته} \rightarrow 365$
 $\frac{39 \times 13 + 121}{2} = 277$

r^k ; $n = 3k \rightarrow n = 0, 3, 6, 9, 12, \dots$ $a_0 + a_1 + \dots + a_n = 10$
 $-2k+2$; $n = 3k+1 \rightarrow n = 1, 4, 7, 10, \dots$ $a_0 = 1 \quad a_3 = 2 \quad a_4 = 5 \quad a_9 = 11$
 $\left[\frac{n}{k+r}\right] + a$; $n = 3k+2 \rightarrow n = 2, 5, 8, 11, \dots$ $a_1 = 4 \quad a_4 = 2 \quad a_5 = 0$
 $a_2 = 1+0 \quad a_5 = 1+a \quad a_8 = 2+a$ $\Rightarrow 2a + 3a = 11 \rightarrow a = 1$
 $a_2 + a_5 + a_8 + \dots + a_{29}$ $n = 11 \rightarrow k = 3 \rightarrow r = 5$
 $2, 5, 8, 11, 14, 17, 20, 23, 26, 29$ $n = 14 \rightarrow k = 4$
 $1+a, 1+a, 1+a, 1+a, 1+a, 1+a, 1+a, 1+a, 1+a, 1+a \rightarrow 10 \rightarrow d(1+14) = -20 + 11 = -9$ $n = 17 \rightarrow k = 5$
 $n = 20 \rightarrow k = 6$
 $n = 29 \rightarrow k = 9$

$an = an^2 + bn + c \Rightarrow an = An^2 + Bn + C$
 $A = \frac{1}{10}x - 14 = -\frac{14}{10} = -\frac{7}{5}$
 $a_5 \rightarrow -\frac{1}{5} \times 25 + 5B + C = 14 \rightarrow 5B + C = 19$
 $a_{10} \rightarrow -\frac{1}{5} \times 100 + 10B + C = 17, 2 \rightarrow 10B + C = 27$
 $5B = 1 \rightarrow B = \frac{1}{5} \rightarrow C = -1$
 $an = -\frac{1}{5}n^2 + \frac{1}{5}n - 1 \rightarrow a_{10} = -\frac{1}{5} \times 100 + \frac{1}{5} \times 10 - 1 = 14$
 $\rightarrow a_1 = -\frac{1}{5} \times 1 + \frac{1}{5} \times 1 - 1 = -\frac{4}{5}$
 $\frac{a_{10}}{a_1} = \frac{14}{-\frac{4}{5}} = -\frac{35}{1} = -35$

$5d \rightarrow a, d \rightarrow a_5 = a' + 4d = a'_1 + d'$
 $10d \rightarrow a, d \rightarrow a_{10} = a' + 9d = a'_1 + 4d'$
 $15d \rightarrow a, d \rightarrow a_{15} = 0 \rightarrow a'_1 + 9d' = 0 \rightarrow a'_1 = -9d'$
 $a + 4d = -10d'$
 $a + 9d = -14d'$
 $5d = 4d' \rightarrow d' = \frac{5}{4}d$
 $a'_5 = a'_1 + 4d' \rightarrow a'_5 = 5d' = 5 \times \frac{5}{4}d = \frac{25}{4}d$

$$\begin{aligned}
 4ar^r &= \omega ar^a + r^r ara \Rightarrow 4(a+d)^r = \omega(a+r^r d) + r^r(a+d)a \\
 4(a^r + d^r + r^r ad) &= \omega a^r + \omega d a + r^r a^r + r^r ad \Rightarrow 4a^r + 4r^r ad + 4d^r = \omega a^r + \omega d a + r^r a^r + r^r ad \\
 \Rightarrow \omega a^r + \omega d a - 4a^r - 4r^r ad - 4d^r &= 0 \Rightarrow r^r a^r + a d - 4d^r = 0 \xrightarrow{d^r} r\left(\frac{a}{d}\right)^r + \frac{a}{d} - 4 = 0 \\
 \frac{a}{d} = x &\Rightarrow r x^r + x - 4 = 0 \rightarrow \Delta = b^r - 4ac = 1 + 4r = 4r \rightarrow \sqrt{\Delta} = 2\sqrt{r} \\
 x = \frac{-b \pm \sqrt{\Delta}}{2a} &= \frac{-1 \pm 2\sqrt{r}}{r} = \left[x = \frac{1}{r}, -2 \right] \Rightarrow \frac{a}{d} = \frac{1}{r}, -2 \\
 \frac{ar}{d} = \frac{a(1+r^r)}{d} &= \frac{a}{d} + r^r \Rightarrow \frac{1}{r} + r^r = \left[\frac{1}{r}, -2 + r^r \right]
 \end{aligned}$$

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$$\begin{aligned}
 b &= \frac{a+c}{r} \rightarrow r b = a+c \\
 \frac{c}{r} &= \frac{r a}{r} \rightarrow c = r \times \frac{a}{r} = r a \\
 r\left(\frac{a}{r}\right) &= r b \rightarrow a = r b \rightarrow b = \frac{a}{r} \\
 * r\left(\frac{a}{r}\right) &= a + r a - \frac{a}{r} = a + r a \rightarrow r\left(\frac{1}{r}\right) = 1 + r \rightarrow 1 = r + r^r \rightarrow r^r + r - 1 = 0 \rightarrow \Delta = b^r - 4ac = 9 \\
 r &= \frac{-1 \pm \sqrt{9}}{r} = \frac{-1 \pm 3}{r} \rightarrow r = \frac{1}{r}, -2 \xrightarrow{x^r} \left[\frac{1}{r}, -2 \right] \\
 a &= b \Rightarrow \text{لا يوجد حل}
 \end{aligned}$$

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$$\begin{aligned}
 b &= ar, \quad ra = \frac{rb+c}{r} \\
 c &= ar^r, \quad ra = \frac{rb+c}{r} \\
 ra &= \frac{r ar + ar^r}{r} \rightarrow r = \frac{r(1+r^r)}{r} \rightarrow r = r + r^r \rightarrow r^r + r - r = 0 \rightarrow (r+r)(1-1) = 0 \\
 \frac{ar}{ar} &= \frac{ar^r}{ar^r} = r^r \rightarrow (-r)^r = -4r \\
 [r = -r / r = 1] &\rightarrow \text{حونا رتبة متساوية}
 \end{aligned}$$

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$$\begin{aligned}
 \frac{ar}{(ar)^r} + \frac{ar}{(a)^r} &= r \rightarrow \frac{ar^{\omega}}{(ar)^r} + \frac{ar}{a^r} = r \rightarrow \frac{ar^{\omega}}{a^r r^r} + \frac{ar}{a^r} = r \\
 \frac{r^r}{a^r} + \frac{r}{a} &= r \xrightarrow{\frac{r}{a} = x} x^r + x = r \rightarrow x^r + x - r = 0 \rightarrow (x+r)(x-1) = 0 \rightarrow [x = -r] [x = 1] \\
 \frac{r}{a} = -r / \frac{r}{a} &= 1 \rightarrow \frac{ar}{ar} = \frac{a}{r} \rightarrow \left[1, -\frac{1}{r} \right]
 \end{aligned}$$

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$$\begin{aligned}
 ar^r &= ar^r, \quad ar^r = \sqrt{ar} \rightarrow (ar^r = \sqrt{ar^r})^r \rightarrow ar^r r^r = ar^r \rightarrow ar = 1 \rightarrow a = \frac{1}{r} \\
 ar^r &= ar^r \rightarrow \frac{1}{r} \times r^r = r^r = r^r \rightarrow [r = r] / [a = \frac{1}{r}] \\
 \frac{1}{r} - \frac{1}{r} &= \frac{r-r}{r} = \left[\frac{1}{r} \right]
 \end{aligned}$$

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