

نام و نام خانوادگی: فاطمه زهرا جمال زاده شماره تلفن: ۱۵۰ کلاس: دوم دبیرستان

19

$$a_1 + a_r + a_r = 21 \Rightarrow a_1 + a_r = 21 - \varepsilon \quad (1)$$

$$a_1 + a_r = 14 \xrightarrow{\text{ن. ب.}} a_1 + \frac{14}{a_1} = 14 \Rightarrow a_1^2 - 14a_1 + 14 = 0$$

$$a_1 + a_1 q + a_1 q^2 = 21$$

$$(a_1 - 1)(a_1 - 14) = 0$$

$$a_1 a_r a_r = 4\varepsilon \Rightarrow a_1 a_1 q a_1 q^2 = 4\varepsilon \Rightarrow a_1^3 q^3 = 4\varepsilon$$

$$(a_1 q)^3 = r^3$$

$$a_1 = 1$$

$$a_1 a_r = 14$$

$$a_1 q = \varepsilon \Rightarrow a_r$$

$$a_1 \times a_1 q^2 = 14 \Rightarrow a_1 q^2 = \frac{14}{a_1}$$

if $a_1 = 1 \Rightarrow a_r = r \Rightarrow q = \varepsilon$ غلط

if $a_1 = 14 \Rightarrow a_r = \varepsilon \Rightarrow q = \frac{1}{\varepsilon}$ ✓

$$n^2 + r, r m, n^2 - r$$

$$b^2 = ac \Rightarrow r m^2 = (n^2 + \varepsilon)(n^2 - r)$$

$$r n^2 = n^4 + r n^2 - n$$

$$n^4 - r n^2 - n = 0 \Rightarrow (n^2 - \varepsilon)(n^2 + r) = 0$$

$$\downarrow$$

$n^2 + r$ دوره برقرار

if $n = r \rightarrow 1, r, r \Rightarrow q = \frac{1}{r}$ ✓

$$(n - r)(n + r) = 0 \Rightarrow \boxed{n \rightarrow \pm r}$$

if $n = -r \rightarrow 1, -\varepsilon, r \Rightarrow q = \frac{1}{r} \rightarrow$ با بهر جهت از سمت راست غلط

$$S_n = a_1 \left(\frac{q^n - 1}{q - 1} \right) \rightarrow S_{14} = 1 \left(\frac{\left(\frac{1}{r} \right)^{14} - 1}{\frac{1}{r} - 1} \right) = 1 \times \left(\frac{\frac{1}{r^{14}} - \frac{1}{r^{14}}}{\frac{1}{r} - 1} \right)$$

$$= 1 \times \frac{-\frac{1}{r^{14}}}{\frac{1}{r} - 1} = \frac{1}{r^{14}} \times \frac{1}{\frac{1}{r} - 1} = \frac{1}{r^{14}} \times \frac{r}{1 - r} = \frac{1}{r^{13}(1 - r)}$$

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(۳) اگر a_1 را برابر ۱ قرار دهیم، مجموع جمله‌های اول به پستی آن به صورت زیر می‌آید:

$$a_1(1 + q + q^2 + q^3 + q^4) = \frac{121}{11}$$

$$S_a = a_1 + a_1q + a_1q^2 + a_1q^3 + a_1q^4 = \frac{121a_1}{11} \Rightarrow \frac{121}{11} \times 242$$

$$\Rightarrow S_a = 242$$

(۴) $d = \frac{b-a}{h+1} \Rightarrow d = \frac{q^4 - 1}{5+1} = \frac{q^4}{6} = 10, d \rightarrow a_5 = 1 + 3(10, d) = 31, d$

در اینجا $a_5 = a_1q^4 = 48 \rightarrow 48 = 1 \times q^4 \rightarrow q^4 = 48 \Rightarrow a_5 = 5 + 11 = 16$

$q = \pm 2$

$$A + B \rightarrow \begin{cases} 31, d + 11 = 42, d \\ 31, d - 11 = 20, d \end{cases}$$

(۵) $-28, \frac{-9d}{4}, \dots \Rightarrow d = \frac{-9d}{4} - (-28) = \frac{-9d + 112}{4} = \frac{1}{2}$

$$a_{101} = a + 100d \rightarrow a_{101} = -28 + 100\left(\frac{1}{2}\right) = +1$$

(۶) $121, ar, \dots$

$$a_n = 1 \rightarrow a_n = a_1q^n$$

$$1 = 121q^n \Rightarrow q = \frac{1}{11}$$

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$$a_r, a_v, a_q$$

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$$a_1 + 2d, a_1 + 4d, a_1 + 11d$$

$$(a_1 + 4d)^2 = (a_1 + 2d)(a_1 + 11d)$$

$$a_1^2 + 8d^2 + 12ad = a_1^2 + 10ad + 14d^2$$

$$20d^2 - 2ad = 0 \quad 2d(10d - a) = 0 \rightarrow 2d = 0$$

درستی چون نصف صحیح
 $d = 0$ غلط چون دنباله غیر ثابت است

$$10d = a$$

$$d = \frac{a_1}{10}$$

$$a_r, a_v, a_n$$

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$$a_1 + d, a_1 + 2d, a_1 + 11d \xrightarrow{\text{دنباله حسابی با ر}} 2d, 4d, 11d$$

$$(a_1 + 4d)^2 = (a_1 + d)(a_1 + 11d)$$

$$a_1^2 + 9d^2 + 12ad = a_1^2 + 12ad + 11d^2$$

$$\Rightarrow 9 = \frac{11d}{9d} = \frac{11}{9}$$

$$a_{10} = a_1 + 9d = \frac{1}{9} \times 29 = 11 \frac{1}{9}$$

$$2d^2 - 2ad = 0$$

$$2d(d - a) = 0 \rightarrow 2d = 0 \rightarrow d = 0 \quad \text{غلط چون دنباله غیر ثابت است}$$

$$d - a = 0$$

$$d = a_1$$

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$$r a_r, r a_r, a_\varepsilon$$

(1)

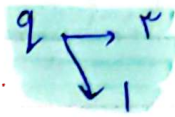
$$r a_q, r a_{q^r}, a_{q^r}$$

$$r a_{q^r} = \frac{r a_q + a_{q^r}}{r} \leadsto r a_{q^r} = r a_q + a_{q^r}$$

$$(q^r - r q + r) = 0$$

$$(11 \vee \omega)$$

$$(q-r)(q-1)=0$$



سے علیحدہ کر کے ثابت کریں

$$r, \frac{r}{r} \leadsto d = \frac{r}{r} - r = \frac{-1}{r}$$

(4)

$$a_r = q_1 + r d \leadsto a_\varepsilon = +r + \left(\frac{-r}{r}\right) = \frac{\omega}{r}$$

$$a_n = q_1 + n d \leadsto a_n = r + \left(\frac{-r}{r}\right) = \frac{1}{r}$$

$$a_{1r} = a_n + \omega d \leadsto a_{1r} = \frac{1}{r} + \left(\frac{-\omega}{r}\right) = \frac{-\varepsilon}{r} = -1$$

$$a_{r+n}, a_{n+n}, a_{1r+n}$$

$$\frac{\omega}{r} + n, \frac{1}{r} + n, -1 + n$$

$$\left(\frac{1}{r} + n\right)^p = \left(\frac{\omega}{r} + n\right)(n-1) \leadsto \frac{1}{14} + n^p + \frac{n}{r} = n^p + \frac{1}{r}n - \frac{\omega}{r}$$

$$\omega = -r, -\omega, -\frac{r\omega}{r}$$

$$q = \frac{-\omega}{-r} = \frac{\omega}{r}$$

$$\frac{1}{14} + \frac{r_0}{14} = -\frac{1}{r} n$$

$$\frac{r_1}{14} = -\frac{1}{r} n$$

$$\Leftarrow n = \frac{-r_1}{r}$$

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(1, V, W) (1,

$$q_1 + a_r + a_v = v^r$$

$$a_1 + a_1 q^r + a_1 q^y = v^r \rightarrow a_1 (1 + q^r + q^y) = v^r$$

$$q=1 \rightarrow a_1 (1+1+1) = v^r$$

$$a_1 = \frac{v^r}{3}$$

$$q=2 \rightarrow a_1 (1+n+4) = v^r$$

$$a_1 = 1$$

$$t_1, t_2, t_3 \rightarrow t_1, t_1+d, t_1+qd$$

$$a_1, a_1+d, a_1+qd$$

$$t_1 = a_1$$

$$a_1+d = a_1 q^r \rightarrow d = a_1 q^r - a_1$$

$$* d = a_1 (q^r - 1)$$

$$a_1+qd = a_1 q^y \rightarrow qd = a_1 q^y - a_1$$

$$qd = a_1 (q^y - 1)$$

قبول
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$$q a_1 (q^r - 1) = a_1 (q^y - 1)$$

$$* b \rightarrow d = a_1 (q^r - 1)$$

$$d = \frac{v^r}{3} (1-1) = 0$$

$$d = \frac{1}{2} (n-1) = \sqrt{}$$

$$q q^r - q = q^y - 1$$

$$q^y - q q^r + n = 0$$

$$(q^r - 1)(q^r - 1) = 0$$

$$q^r \rightarrow 1 \Rightarrow q=1$$

$$n \Rightarrow q=2$$

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