

نام خانوادگی: فاطمه زهرا جمال زاده تکلیف شماره: ۱۳ کلاس: دهم ریاضت A

$$a_1 = 40 \quad a_n = 41 \quad d = \frac{a_n - a_1}{n - 1} \Rightarrow d = \frac{41 - 40}{4 - 1} = \frac{1}{3} = \sqrt{\quad} \quad (1)$$

$$a_n = Vn + 33$$

$$201 = Vn + 33$$

$$178 = Vn$$

در این صورت $201 = 178 + 23$

(2) $100 \leq Vn + 3 \leq 999$ (دنباله ای اندازی که بر ۷ باقی مانده ۳ می‌گردد)

$97 \leq Vn \leq 994 \Rightarrow \underbrace{101}_{a_1}, \underbrace{101, \dots, 997}_{a_{129}} \rightarrow 129 - 1 + 1 = 129$

$$997 = Vn + 9$$

$$908 = Vn \rightarrow n = 129$$

(3)

$$\begin{aligned} a_{n+1} &\rightarrow a_n = a_1 + nd \\ a_{n+2} &\rightarrow a_n = a_1 + (n+1)d \\ a_{n+3} &\rightarrow a_n = a_1 + (n+2)d \end{aligned}$$

طبق قاعده سه جمله

$$3a_1 + (3n+3)d = -9n + 12$$

$$3a_1 + 3dn + 3d = -9n + 12$$

$$3dn = -9n$$

$$3d = -9$$

$$d = -3$$

Hashtag
H A S H T A G

$$\text{if } d = -2 \rightarrow 2a_1 : -4n - 4 = -4n + 12$$

$$2a_1 = 16$$

$$\boxed{a_1 = 8}$$

$$a_n = a_1 + (n-1)d$$

$$a_n = +4 + (n-1) \cdot 2 \rightarrow a_{11} = +4 - 12 = -8$$

$$a_{14} = +4 - 3 \cdot 2 = -2$$

$$a_{11} + a_{14} = -8 - 2 = -10$$

$$a_r = r^m - 1$$

$$a_n = r^{n+1}$$

$$a_{1r} = r^{2m} - r$$

$$a_r = r^r - 1 = r$$

$$a_n = r^r = 1$$

$$a_{1r} = r^r - r = 1r$$

$$a_r + a_n + a_{1r} = r + 1 + 1r = 2r$$

$$d = \frac{a_m - a_n}{m - n}$$

$$d = \frac{r^{n+1} - r^n - 1}{n - 1} = \frac{r^{2m} - r - r^{n+1}}{1r - 1}$$

$$\begin{aligned} r^{n+1} - r^n - 1 &= r^n - r - r^{n+1} \\ r^{n+1} - r^n - r^{2m} + r^{2m+1} &= -1 \\ r^{n+1} - r^n - r^{2m} &= -1 \end{aligned}$$

$$r^{2m} (r^{2r} - 1 - r^n) = -1$$

$$r \times r^n - r^{2m} = -1$$

این جای ۲ هم ندارم تناسلی برقرار می شود

$$r \times r^r - r^2 = -1$$

$$1r - 1r \neq -1$$

$$a_{1r} - a_{10} = \omega$$

$$\rightarrow d = \frac{a_m - a_n}{m - n} = \frac{a_{1r} - a_{10}}{1r - 10} = \boxed{\frac{\omega}{r}}$$

$$a_{10} + a_{1r} = 2\omega$$

$$\rightarrow a_1 + 9d + a_1 + 11d = 2\omega$$

$$a_{11} = ?$$

$$2a_1 + 20d = 2\omega$$

$$2a_1 + 20\left(\frac{\omega}{r}\right) = 2\omega$$

$$a_n = a_1 + (n-1)d$$

$$2a_1 = -2\omega$$

Hashtag $a_n = -\frac{2\omega}{r} + (n-1)\frac{\omega}{r}$

$$\boxed{a_1 = -\frac{2\omega}{r}}$$

HASHTAG $a_{11} = -\frac{2\omega}{r} + 10\left(\frac{\omega}{r}\right) \Rightarrow \boxed{a_{11} = 8\omega/r}$

$$S_a = \frac{\omega}{r} (ra_1 + \varepsilon d) = \frac{(10a_1 + r_0 d)}{r} \quad (4)$$

$$S_{10} - S_a = \omega (ra_1 + 9d) - \frac{\omega}{r} (ra_1 + \varepsilon d)$$

$$\rightarrow 10a_1 + \varepsilon \omega d - \omega a_1 + 10d = \omega a_1 + r \omega d$$

$$\frac{S_a}{S_{10} - S_a} = \frac{\frac{10a_1 + r_0 d}{r}}{\omega a_1 + r \omega d} = \frac{10a_1 + r_0 d}{10a_1 + r_0 d} = \frac{1}{r}$$

$$r_0 a_1 + r_0 d = 10a_1 + r_0 d$$

$$r_0 a_1 - 10a_1 = 0$$

$$10(r a_1 - d) = 0$$

$$\Rightarrow r a_1 - d = 0$$

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

$$\frac{a_r - 1}{a_1} \rightarrow \frac{a_1 + d}{a_1} = ?$$

$$\frac{a_1 = \frac{d}{r}}{\frac{r d}{r} = \frac{d}{r}} = r \text{ i.e. } \boxed{r}$$

$$\left. \begin{aligned} t_n - t_{n-r} &= 10 \\ t_n - t_{n-r} &= r d \end{aligned} \right\} \Rightarrow r d = 10$$

$$\boxed{d = 10}$$

(v)

$$t_q^r - t_a^r \xrightarrow{\text{Bijection}} (t_q - t_a) (t_q + t_a) = r_0 (r + v)$$

$\downarrow$
 $\xrightarrow{d=10} \varepsilon d$
 $r \times \omega = r_0$

$$\frac{t_q^r - t_a^r}{t_v} = \frac{r_0 (r + v)}{t_v} = \varepsilon_0 \text{ i.e. } \boxed{\varepsilon_0}$$

$$d = \frac{b-a}{n+1} \rightarrow d = \frac{r + \sqrt{r} - r(1 - 4\sqrt{r})}{1r + 1} \quad (1)$$

$$d = \frac{r + \sqrt{r} - r + 4r\sqrt{r}}{1r + 1} = \frac{4r\sqrt{r}}{1r + 1} = \boxed{\sqrt{r}}$$

Hashtag

H A S H T A G

$$a_1 = 2$$

$$a_{n+1} = 11$$

$$a_{2n-2+2} = a_{2n-1} = 22$$

$$d = \frac{a_m - a_n}{m - n} \Rightarrow d = \frac{a_{n+1} - a_1}{n+1-1} = \frac{11-2}{n}$$

$$d = \frac{a_{2n-1} - a_{n+1}}{2n-1-n-1} = \frac{22-11}{2n-2} = \frac{\frac{9}{n}}{\frac{2n-2}{2n-2}} = \frac{9}{n}$$

$$\frac{9}{n} = \frac{21}{2n-2} \rightarrow 21n = 2(2n-11)$$

$$11n = 4n \rightarrow \boxed{n=2}$$

$$a_n + a_{n+2} = a_2 + a_{12} \xrightarrow{\text{جمع اندیس ها برابر}} n+n+2=20$$

$$2n+2=20$$

$$\boxed{n=9}$$

$$a_n = \frac{2a_n}{2} \Rightarrow a_n = \frac{2a_2}{2}$$

$$\left. \begin{array}{l} \textcircled{1} a_n - a_2 = \frac{2a_2}{2} - a_2 = \frac{2a_2}{2} \\ \textcircled{2} a_n - a_2 = a_2 + 2d - a_2 = 2d \end{array} \right\} \Rightarrow \frac{2d}{2} = \frac{2a_2}{2}$$

$$2d = a_2$$

$$a_2 = a_1 + 2d$$

$$2d = a_1 + 2d \rightarrow a_1 = -d$$

$$a_n = a_1 + (n-1)d$$

$$0 = a_1 + (n-1)d \rightarrow 0 = (-d) + (n-1)d$$

$$0 = d(-1+n-1) \xrightarrow{d \neq 0} -1+n-1=0$$

$$-1+n-1=0$$

$$\boxed{n=2} \leftarrow \text{نقطه دوم صفر است}$$

Hashtag