

نام و نام خانوادگی ۱۵/۵ پاسخنامه تشریحی تکلیف شماره ...۱۷... کلاس ...دوم دبیرستان...

اعداد اول شروع با $1, 2, 5, 9, 14, 20, \dots$

$$\begin{cases} a+b+c=2 \\ 4a+2b+c=5 \\ 9a+3b+c=10 \end{cases}$$

معادله دوم: n^2+1 الیه اروپا بنویسیم

معادله اول: n^2+1 الیه اروپا بنویسیم

$$a_4 = 9 \cdot 4 + 1 = 37$$

$$\frac{9 \cdot 4 - 11}{2} = 14$$

$a=1, b=0, c=1 \Rightarrow a_n = n^2 + 1$

$\{3^0, 3^1\}, \{3^1, 3^2\}, \{3^2, 3^3\}, \dots, \{3^{n-1}, 3^n\}$

(۱) (۲) (۳)

دسته بی‌نهایت $\{3^4, 3^5\}$

$$\frac{2 \cdot 3^4 + 11}{2} = 162$$

$\{11, 2 \cdot 3^4\}$

$a_1 = 1, a_2 = 4, a_3 = 9, a_4 = 16, a_5 = 25, a_6 = 36, a_7 = 49, a_8 = 64, a_9 = 81, a_{10} = 100$

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$a_f = a_r, a_n = a_v$

$(p+q=a_1+rd) - (vp+q=a_1+vd) = ap = fd, p = \frac{fd}{a}$

$10p+q = 10 \cdot \frac{fd}{a} + q = 10 \cdot \frac{fd}{a} - 10 \cdot \frac{fd}{a} = 0$

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$$4(a+d)r = \omega(a+rd)a + r(a+d)a \quad a = \frac{-d \pm \sqrt{\Delta}}{r}$$

$$4ar^2 + 4rad + 4dr^2 = \omega ar^2 + \omega ad + ra^2 + rad \quad a = \frac{-d \pm \sqrt{\Delta}}{r}$$

$$4ar^2 + 4rad + 4dr^2 = 1ar^2 + 1rad$$

$$4dr^2 = ra^2 + ad$$

$$0 = -4dr^2 + ra^2 + ad$$

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

$$a = -rd$$

$$a_f = \frac{rd}{r} + rd = \frac{qd}{r}$$

$$a_f = -rd + rd = d$$

6

$$b-a = c-b \Rightarrow c = rb-a$$

$$\frac{a}{b} = \frac{c}{r} \Rightarrow \frac{a}{rb} = \frac{c}{ra} \Rightarrow rb \times ra = cab \Rightarrow a \times ra = c \times rb$$

$$ra^2 = rbc \Rightarrow a^2 = bc \rightarrow a^2 = b(rb-a) = rb^2 - ab \Rightarrow a^2 + ab - rb^2 = 0$$

1

$$b = ar \quad c = ar^2 \Rightarrow ra - rb = c - ra \Rightarrow ra - rar = ar^2 - ra$$

$$\frac{r}{a} - \frac{rar}{a} = \frac{ar^2}{a} - \frac{ra}{a} \Rightarrow a(r-r^2) = a(r^2-r) \Rightarrow r+r = r^2+r^2 \Rightarrow r = r^2+r^2$$

$$r^2+r^2-r=0 \quad r = \frac{-r \pm \sqrt{\Delta}}{r} = \frac{-r \pm a}{r}$$

$$r=1 \quad \leftarrow \text{مقدار } a, b$$

$$r = -r$$

$$\frac{ar}{ar} = \frac{ar^2}{ar^2} = r^2 = (-r)^2 = -rf$$

1

$$\frac{ar^a}{ar^r} + \frac{ar}{ar} = \frac{r^r}{a^r} + \frac{r}{a} = r \Rightarrow \left(\frac{r}{a}\right)^r + \frac{r}{a} - r = 0 \quad \leftarrow \text{مقدار } a, b \Rightarrow 1 \frac{r}{a} - r$$

$$\frac{a^r}{a^r} = \frac{a^r}{ar} = \frac{a}{r} = 1 \frac{r}{a} - \frac{1}{r}$$

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$$ar = ar^r$$

$$rf = ar^r$$

$$ra = ar^a$$

$$ar = \sqrt{ar \times ar} \Rightarrow ar^r = \sqrt{ar^r \times ar^r} = \sqrt{ar^r} = ar^{\frac{r}{2}} \Rightarrow ar^r = ar^{\frac{r}{2}}$$

$$ar = rv \Rightarrow ar = a \times r = rv \Rightarrow a = rv$$

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

$$ar = 1 \quad \leftarrow \text{مقدار } a, b$$

$$-r/1$$

10

$$r(r-ra) = 1$$

$$r^2 - ra = 1$$

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

10

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

$$\boxed{\text{دسته پنجم}} \rightarrow \{121, 122, \dots, 363\}$$

$$\text{میانگین حساب} \rightarrow \bar{x} = \frac{121 + 363}{2} = \frac{484}{2} = \boxed{242}$$

* حسابات دسته پنجم دنباله ای صافی با قدر نسبت 1 هستند پس میانگین با میانگین صمد اول و آخر برابر می‌کنند!

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

$$a_1, a_5, a_7 \rightarrow (-2k+4) \text{ ضابطه دوم}$$

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

$a_0 = 2^0$ $a_0 = 1$	$a_3 = 2^1$ $a_3 = 2$	$a_4 = 2^2$ $a_4 = 4$	$a_9 = 2^3$ $a_9 = 8$
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$a_1 = -2(0) + 4$ $a_1 = 4$	$a_5 = -2(1) + 4$ $a_5 = 2$	$a_7 = -2(2) + 4$ $a_7 = 0$
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$$S_{10} = 1 + 4 + a_2 + 2 + 2 + a_6 + 4 + 0 + a_8 + 8 = 19$$

$$a_2 + a_6 + a_8 = -2 \rightarrow 3a + 4 = -2 \rightarrow \boxed{a = -2}$$

مجموع حسابات $a_2 + a_6 + \dots$ از ضابطه سوم بدست می‌آید

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

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

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:

$$S = a_2 + a_6 + a_8 + \dots + a_{24}$$

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

$$a, b, c \xrightarrow{\text{صافی}} b = \frac{a+c}{r} \rightarrow a = r b - c$$

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

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

$$b=c \rightarrow \text{عقار! مثبت متساوی!}$$

$$\epsilon b = c \rightarrow \text{ق ق} \checkmark \rightarrow \frac{a + \epsilon b}{r} = b \rightarrow a = -rb$$

$$\text{دنبه} \rightarrow b, \frac{a}{r}, \frac{c}{r} \rightarrow b, -b, b \rightarrow q = -1$$

$$rq = -r$$

$$a^r = \sqrt{a^r} \rightarrow (aq^r)^r = aq^r \rightarrow a^r q^{\epsilon} = aq^r \rightarrow \underline{aq = 1} \quad \checkmark$$

$$a\omega = rv \rightarrow aq^{\epsilon} = rv \rightarrow (\cancel{aq}) q^r = rv \rightarrow q^r = rv \rightarrow \underline{q = r}$$

$$\underline{a = \frac{1}{r}}$$

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