

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۱۸۰ کلاس
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$$\begin{aligned} a_1 &= 40 \\ a_2 &= a_1 + 3d = 41 \\ 40 + 3d &= 41 \\ 3d &= 41 - 40 \rightarrow d = 1 \\ a_n &= 40 + (n-1) \cdot 1 \\ &= 40 + n - 1 \\ &= 39 + n \end{aligned}$$

$$\begin{aligned} 201 &= 39 + n \\ 170 &= n \\ n &= 170 \end{aligned}$$

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$$\begin{aligned} \text{اولین آن} &\rightarrow 100 + 3 = 103 \\ \text{ساد} & \quad 101 \end{aligned}$$

$$\begin{aligned} n &= \frac{997 - 101}{3} + 1 = 129 \end{aligned}$$

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$$\begin{aligned} \text{آخرین آن} &\rightarrow 997 + 3 = 997 \\ \text{ساد} & \quad 997 \end{aligned}$$

$$101 + (n-1) \cdot 3 = 997$$

$$3n - 3 = 896$$

$$3n = 899 \quad n = 129$$

$$101, 104, \dots, 997$$

$$a_{n+1} + a_{n+2} + a_{n+3} = -2n + 12 \quad * a_{n+1} + a_{n+3} = a_{n+2} + a_{n+2}$$

$$3(a_{n+2}) = -2n + 12$$

$$a_{n+2} = -\frac{2n}{3} + 4$$

$$a_{n+2}d = -\frac{2n}{3} + 4$$

$$a_n = -\frac{2n}{3} + 4 - 2d$$

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

$$-2n + 4 - 2d = a + nd - d \rightarrow d = -2$$

$$-2 \times 2 - 2 = a - 1 - 2$$

$$-4 - 2 = a - 3$$

$$-6 = a - 3 \rightarrow a = -3$$

$$a_1 + a_{10} =$$

$$-3 + 17d + 17d =$$

$$-3 + 34d =$$

$$-3 + 34 \times (-2) = -71$$

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$$a_{12} = 2^x - 1$$

$$a_1 = 2^x + 1$$

$$a_{12} = 2^{12} - 1$$

$$a_{12} + a_{12} = a_1 + a_1$$

$$2^x - 1 + 2^x - 1 = 2^x + 1 + 2^x + 1$$

$$2^x + 2^x - 2 = 2^x + 2$$

$$2^x + 2^x - 2^x - 2^x = -2$$

$$2^x(2^x - 1 - 2^x) = -2$$

$$2^x(-1) = -2$$

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$$a_{12} - a_{10} = 0$$

$$a + 11d - a - 9d = 0$$

$$2d = 0 \rightarrow d = 0$$

$$a_{12} - a_{10} = 0$$

$$+ a_{12} + a_{10} = 20$$

$$2a_{12} = 20 \rightarrow a_{12} = 10$$

$$a_{21} = a_{12} + 9d = 10 + 9 \times 0 = 10 + 0 = 10$$

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$$S_{\infty} = \frac{1}{p} S_{105r}$$

$$\frac{a}{p} (ra_1 + rd) = \frac{1}{p} \times \frac{a}{p} (ra_1 + rd)$$

$$ra_1 + rd = \frac{ra_1}{p} + \frac{rd}{p}$$

$$ra_1 - \frac{ra_1}{p} = \frac{rd}{p} - rd$$

$$\frac{ra_1 - ra_1}{p} = \frac{rd - rd}{p}$$

$$\frac{ra_1}{p} = \frac{rd}{p}$$

$$ra_1 = rd \rightarrow d = ra_1$$

$$\frac{a_r}{a_1} = \frac{a+d}{a} = \frac{a_1 + ra_1}{a_1} = \frac{ra_1}{a_1} = r$$

$$t_n = t_{n-1} + 10$$

$$* t_{n-1} = t_{n-2} + 10 \rightarrow t_{n-1} = a_{n-1} - rd$$

$$t_n = t_{n-1} + 10$$

$$rd = 10 \rightarrow d = 10$$

$$t_n - t_{n-1} = (t_n - t_{n-1})(t_n + t_{n-1})$$

$$t_n - t_{n-1} = a + rd - a - rd = rd$$

$$t_n + t_{n-1} = a + rd + a + rd = 2a + 2rd$$

$$rd = 10 \quad 2a + 2rd = 2a + 20$$

$$t_n = a + rd = a + 10$$

$$\rightarrow \text{solution} \rightarrow \frac{r_0 \times p(a + r_0)}{a + r_0} = r_0 \times p$$

$$* d = \frac{b-a}{k+1}$$

$$d = \frac{1 + 0.05 - 1(1 - 0.05)}{10 + 1} =$$

$$\frac{1 + 0.05 - 1 + 0.05}{11} =$$

$$\frac{0.1}{11} = 0.009$$

$$d = \frac{r_0 p - 1}{r_0 n - 1} = \frac{r_0}{r_0 n - 1} = \frac{10 \times 10}{10(10-1)} = \frac{10}{9}$$

$$p(n) \text{ terms} = 11$$

$$10n = 10(p(n-1))$$

$$10n = 10n - 10 \rightarrow n = 10$$

$$10n = 10 + n \times \frac{10}{9} = 11$$

$$\frac{10n}{9} = 1$$

$$a_n + a_{n+r} = a_p + a_{p+r} \rightarrow * \text{problem: } m+n = q+p$$

$$n+n+r = p+p$$

$$2n+r = 2p$$

$$2n = 2p - r \rightarrow n = p - \frac{r}{2}$$

$$a_n = p a_p$$

$$a_n = p a_p$$

$$a + rd = p(a + rd)$$

$$a + rd = pa + pd$$

$$rd - pd = pa - a$$

$$ra = -rd$$

$$a = -d$$

$$* \text{problem: } a+d = p+d+d$$