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$$\{1\}, \{2, 3, 4\}, \{5, 6, 7, 8, 9\}, \{10, 11, 12, 13, 14, 15, 16\}$$

$$an^2 + bn + c$$

$$a = 1, b = -2, c = 1$$

$$11 = 9^2 = 81$$

$$11 + 25 = 36 = 6^2$$

$$\frac{11 + 25}{2} = \frac{36}{2} = 18$$

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$$\{1, 2, 3\}, \{4, 5, 6, 7, 8, 9, 10, 11, 12\}, \{13, \dots, 14, 15, 16, 17, 18, 19, 20\}$$

$$\frac{1+3}{2} = 2$$

$$\frac{4+12}{2} = 8$$

$$\frac{13+20}{2} = 16.5$$

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$$n = 1(2k + 1, k = 0, 1, 2, \dots): a_1 = -2 \times 0 + 4 = 4$$

جواب صفحه آخر...

$$an^2 + bn + c$$

$$a = \frac{1}{10} \times -14 = -\frac{1}{5}$$

$$-14 + 5b + c = 14$$

$$-\frac{14}{5} + 5b + c = 14, 2$$

$$-\frac{14}{5} + 5b = 15, 2$$

$$-\frac{14}{5} + 5b = 15, 2$$

$$5b = 15, 2 + \frac{14}{5} = 15, 2 + 2, 8 = 15, 2$$

$$b = 1, 6 = 15, 2$$

$$-\frac{1}{5} + 4 - 1 = \frac{14}{5}$$

$$-\frac{1}{5} + 4 - 1 = \frac{14}{5}$$

$$-\frac{1}{5} + 4 - 1 = \frac{14}{5}$$

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$$a + kd$$

$$a + 10d$$

$$a_1 - a_4 = 4d$$

$$a_4 = f(4) - f(1)$$

$$f(1) = 0$$

$$\frac{f(10) - f(1)}{d} = ?$$

$$f(n) = m + kn$$

$$f(10) = 10k + m = 0$$

$$m = -10k$$

$$f(n) = k(n - 10)$$

$$f(10) = k(10 - 10) = 0$$

$$0k = 4d \Rightarrow k = \frac{4}{5}d$$

$$f(10) = 0k = 0 \times \frac{4}{5}d = 0$$

$$\frac{4d}{d} = 4$$

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~~Handwritten scribbles and crossed-out text.~~

$$da(a+rd) + ra(qd) = da^r + load + ra^r + rad = Aa^r + rad$$

$$9a^r + rad + 9d^r = 1a^r + 1rad$$

$$8d^r - 9d - 1a^r = 0$$

$$a(a+rd) \times r + a+rd \times \Delta a = 9(a+rd)$$

$$d = \frac{a \pm \sqrt{9a^r}}{1r} = \frac{a \pm \sqrt{a}}{1r}$$

$$9(a^r + rad + d^r) = 9a^r + 1rad + 9d^r$$

$$d = \frac{ra}{r} \quad q = a + r \frac{ra}{r} = \frac{ra}{r} \quad \frac{ra}{r} = \frac{9}{r} \quad \frac{a}{d} = -\frac{a}{-\frac{a}{r}} = 1$$

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

$$\frac{a}{r} = bq \quad \frac{c}{r} = \frac{a}{r} \times q$$

$$q = \frac{\frac{a}{r}}{\frac{b}{r}} = \frac{a}{rb}$$

$$q = \frac{\frac{c}{r}}{\frac{a}{r}} = \frac{c}{ra}$$

$$c = rb - a$$

$$a^r = b(rb-a) \Rightarrow rb^r - ab - a^r = 0$$

$$b = \frac{a \pm \sqrt{9a^r}}{r} = \frac{a \pm \sqrt{a}}{r}$$

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

$$q = \frac{a}{rb} = \frac{a}{r \cdot \frac{a}{r}} = 1$$

$$q = \frac{a}{b} = \frac{a}{-\frac{a}{r}} = -1$$

$$rq = r(-1) = -r$$

$$ra - rb = c - ra$$

$$c = ra - rb$$

$$b = aq \quad c = aq^r$$

$$aq^r = ra - rb = ra - r(aq) = ra - raq$$

$$q + rq - r = 0 \quad q = \frac{-r \pm \omega}{r} \Rightarrow q = -r$$

$$\frac{aq}{a} = \frac{aq^r}{aq^a} = a^r = (-r)^r = -r^r$$

$$r = \frac{aq}{(a)^r} + \frac{aq^a}{(aq)^r}$$

$$\frac{r}{a} = \frac{q}{a^r} = \frac{aq^a}{a^r q^r} = \frac{aq^a}{(aq)^r}$$

$$\frac{q}{a} = \frac{aa}{(a)^r}$$

$$r = \frac{q}{a} + \frac{q^r}{a^r}$$

$$ra^r = aq + q^r$$

$$\frac{a}{q} = \frac{a^r}{aq} = \frac{a^r}{a_r} \Rightarrow aq = a^r$$

$$ra^r = aq + q^r$$

$$ra^r = \frac{a^r}{2} + \frac{a^r}{2^r}$$

$$r = \frac{1}{2} + \frac{1}{2^r}$$

$$0 = \frac{1}{2^r} + \frac{1}{2} - r$$

$$= r^2 - r - 1$$

$$r = \frac{r \pm 1}{2}$$

$$r = 1$$

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

$$a_r = \sqrt{a_f}$$

$$a_d = rV$$

$$a_r = aq^r$$

$$a_f = aq^r$$

$$a_d = aq^r$$

$$aq^r = \sqrt{a_f} = \sqrt{a} \times q^{\frac{r}{r}}$$

$$aq^{\frac{1}{r}} = \sqrt{a} \Rightarrow q^{\frac{1}{r}} = \frac{\sqrt{a}}{a} = \frac{1}{\sqrt{a}}$$

$$q = \frac{1}{a}$$

$$a_d = aq^r = a\left(\frac{1}{a}\right)^r = \frac{1}{a^r} = rV$$

$$q^r = \frac{1}{rV} \Rightarrow a = \frac{1}{r} \quad \checkmark$$

$$\frac{1}{r} - \frac{1}{r} = \frac{r}{r} - \frac{r}{r} = \left(\frac{1}{r}\right)$$

ضابطه اول $\rightarrow a_0, a_3, a_4, a_9$

ضابطه دوم $\rightarrow a_1, a_4, a_7$

ضابطه سوم $\rightarrow a_2, a_5, a_8$

$$S_{10} = 1 + 4 + (1+a) + 2 + (1+a) + 4 + 0 + (2+a) + 8 = 19 \rightarrow a = -2$$

جمع عملیات خواسته شده از ضابطه سوم به دست می آید :

$$a_n = \left\lfloor \frac{n}{K+2} \right\rfloor - 2 \xrightarrow{n=3K+2} \left\lfloor \frac{3K+2}{K+2} \right\rfloor - 2 = \overset{\text{میاد بیرون}}{\left\lfloor 2 + \frac{K-2}{K+2} \right\rfloor} - 2 = \left\lfloor \frac{K-2}{K+2} \right\rfloor$$

این عبارت به ازای $K=0$ برابر ۱- و به ازای بقیه اعداد صحیح پس جواب خواسته شده ۲-.