

چون شرایط - دهم برآورد A - تکلیف شده

$$a_n = 12, 13, 14, \dots \Rightarrow a_n = an^2 + bn + c = 12, 13, 14, \dots, c = 0$$

$$\Rightarrow a_n = \sum_{k=1}^n k^2 + bn \Rightarrow b = -\frac{1}{2} \Rightarrow a_n = \sum_{k=1}^n k^2 - \frac{1}{2}n$$

$$\Rightarrow a_{10} = \sum_{k=1}^{10} k^2 - \frac{1}{2} \times 10 = 140 - 5 = \boxed{135}$$

$$a_n = 0, 1, 2, 4, \dots \Rightarrow a_n = \frac{n(n-1)}{2}$$

$$\Rightarrow a_n = \frac{n(n-1)}{2} = 110$$

$$\Rightarrow n(n-1) = 110 \Rightarrow n^2 - n - 110 = 0 \Rightarrow (n+10)(n-11) = 0$$

$$\Rightarrow n = \begin{cases} -10 \\ 11 \end{cases} \Rightarrow \boxed{n = 11}$$

$$a_n = 12, 13, 14, \dots \Rightarrow S_{11} = \frac{11}{2} (2(12) + (11-1)1) = \frac{11 \times 90}{2} = \boxed{495}$$

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4- هر چند n را بزرگ کنیم خروجی بزرگتری شود پس قدر مطلق کمتر کند و شود. پس بیشترین و کمترین مقدار کسر و دنباله عبارتند از

$$\left. \begin{array}{l} \text{کمترین مقدار} \rightarrow n=1 \rightarrow a_n = -\frac{1}{1} = -1 \\ \text{بیشترین مقدار} \rightarrow n=2 \rightarrow a_n = \frac{1}{2} \end{array} \right\} a_2 - a_1 = \frac{1}{2} - (-\frac{1}{1}) = \boxed{\frac{3}{2}}$$

$$b_2 = (-2)^2 - V(2) = 4 - 2 = 2$$

$$a_n = -48, -47, -46, \dots \Rightarrow \boxed{n=14} \Rightarrow \boxed{14}$$

$$a_1 - a_1 + a_1 + d - a_1 + d + 11 \Rightarrow d = 1$$

-4

$$a_4 - a_1 + a_1 + d - a_1 + d + d + d(1) + \boxed{10}$$

$$a_1 - a_1 + d + 11 \Rightarrow d = 1 \Rightarrow a_1 = 1, a_2 = 11$$

-V

$$b_n = \underbrace{1, 1, 1, \dots}_{+1} \Rightarrow \boxed{b_n = 1, n = 1}$$

$$a_{\text{عددی}} = 1, 4, 10, 14, \dots \Rightarrow a_{\text{عددی}} = 2n - 2$$

-A

$$a_{\text{فیزی}} = 2, 7, 9, 11, \dots \Rightarrow a_{\text{فیزی}} = 2n + 3$$

$$\Rightarrow \frac{2n-2}{2n+3} < \frac{1}{2} \Rightarrow 1n-1 < 4n+9 \Rightarrow 2n < 10 \Rightarrow n < 5, d$$

$$\Rightarrow \boxed{n = 1, 2, 3, 4, d, 4}$$

1 2 4

$$a_n = 4, 9, 9, 4, 0 \Rightarrow \underbrace{+2}_{-2}, \underbrace{+0}_{-0}, \underbrace{+(-1)}_{-1}, \underbrace{+(-4)}_{-4} \Rightarrow A = -\frac{1}{2}$$

-9

$$\Rightarrow a_n = -\frac{1}{2}n^2 + Bn \Rightarrow B = 1, d$$

$$\Rightarrow 2A + dB = 2(-\frac{1}{2}) + d(1, d) = 1, d$$

$$a_n = a_1, 1, a_2, 1 \Rightarrow d = 1 - 1 \Rightarrow d = 0$$

-10

$$\Rightarrow a_n = dn + 1$$

$$b_n = -4, -1, 0, \dots \Rightarrow \underbrace{+2}_{+2}, \underbrace{+1}_{+1} \Rightarrow b_n = n^2 + bn + c \Rightarrow 1a + 1, c = -4$$

$$\Rightarrow b_n = n^2 + bn - 4 \Rightarrow b = -1$$

$$\Rightarrow b_n = n^2 - n - 4$$

$$b_n = a_n \Rightarrow n^2 - n - 4 = dn + 1 \Rightarrow n^2 - 4n - 5 = 0 \Rightarrow (n+1)(n-5) = 0$$

$$\Rightarrow n = \begin{cases} -1 \\ 5 \end{cases} \Rightarrow \boxed{n = 5}$$