

$$\{1\}, \{2, 3, 4\}, \dots$$

$$\rightarrow 1, 3, 7, 13, 21, \dots \rightarrow n^2 + n - 1 = a_n$$

$$a_9 = 11 + 9 - 1 = 19$$

$$1, 3, 7, 13, 21, \dots, 12, 13, \dots, 39, 40, 41, \dots, 120, 121, \dots, 343, 344, \dots$$

$$\frac{121 + 343}{2} = 232$$

$$2, 1 + a + 2, 2, 1 + a, 4, 0, 2 + a, 1, 0, -2$$

$$\rightarrow \text{مجموع} = 22 + 3a = 19 \Rightarrow 3a = -3 \Rightarrow a = -1$$

$$a_1, a_2, a_k \Rightarrow 3k + 2 - n \rightarrow \left[\frac{3k + 2}{k + 2} \right] = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$S = 2 \times 1 + 1 \times 2 + 1 \times a = 11 - 10 = 1 \quad k = \{0, 1, \dots, 9\}$$

$$t_n = an^2 + bn + c$$

مشتق

$$a = \frac{1}{v_0} \times (\text{مشتق}) \rightarrow \frac{1}{v_0} \times -14 = -\frac{1}{a}$$

$$t_w = \left(-\frac{1}{a} \times w^2\right) + wb + c = 14 \quad / \quad -a + wb + c = 14 \rightarrow wb + c = 14$$

$$t_v = \left(-\frac{1}{a} \times v^2\right) + vb + c = 17, 2 \quad / \quad -9, 1 + vb + c = 17, 2 \rightarrow vb + c = 27$$

$$-a + wb + c = 14 \rightarrow -a + 20 + c = 14 \leftarrow$$

$$2b = 1$$

$$b = \frac{1}{2}$$

$$c = -1$$

$$t_n = -\frac{1}{a} n^2 + \frac{1}{2} n - 1$$

$$t_1 = -\frac{1}{a} + \frac{1}{2} - 1 = 2, 1$$

$$t_{14} = \left(-\frac{1}{a} \times 14^2\right) + \frac{1}{2} \times 14 - 1 = -14a + 7 - 1 = 14$$

$$\frac{t_{14}}{t_1} = \frac{14}{2, 1} = 7$$

Arman

$$\text{خطی} \rightarrow a_n = p_n + q$$

$$a_{10} = 0 \rightarrow 10p + q = 0 \rightarrow q = -10p$$

$$a_n = p_n - 10p = p(n-10)$$

$$a_2 = p(2-10) = -8p$$

$$a_7 = p(7-10) = -3p$$

$$a_{10} = p(10-10) = 0$$

$$\frac{a_{10}}{d} = \frac{0}{d} = \boxed{0} \checkmark$$

$$\text{حسابی} \rightarrow A_1 = -1p$$

$$A_1 = -2p$$

$$A_n = A_1 + (n-1)d$$

$$A_2 = A_1 + d = -1p$$

$$A_7 = A_1 + 6d = -2p$$

$$A_1 - A_2 = d = 2p$$

$$d = \frac{2p}{2}$$

$$4a_2^2 = 2a_3 \times a_1 + 3a_2 \times a_1$$

$$[2a_1^2 + 10ad + 3a_1^2 + 3ad = 4a_1^2 + 4d^2 + 12ad]$$

$$\downarrow 2a_1^2 + ad - 4d^2 = 0 \xrightarrow{\div d^2} 2\left(\frac{a}{d}\right)^2 + \frac{a}{d} - 4 = 0 \xrightarrow{x = \frac{a}{d}}$$

$$2x^2 + x - 4 = 0 \Rightarrow x = \frac{-1 \pm \sqrt{1+32}}{4} = \frac{-1 \pm \sqrt{33}}{4} \Rightarrow x = \frac{a}{d}$$

$$\downarrow a = -2d \Rightarrow \frac{a+2d}{d} = \frac{d}{d} = 1$$

$$2a = 2d \Rightarrow a = \frac{2}{2}d \rightarrow \frac{2}{2}d + 2d = \frac{q}{2}$$

$$b = (a+d), c = (a+2d)$$

$$\rightarrow \frac{a+c}{2} = b \rightarrow a+c = 2b$$

$$2q = \boxed{-2}$$

$$b \times \frac{c}{2} = \left(\frac{a}{2}\right)^2 \rightarrow \frac{bc}{2} = \frac{a^2}{2} \Rightarrow bc = a^2$$

$$a^2 = bc \Rightarrow (a+d)(a+2d) = a^2 + 2ad + 2d^2$$

$$2ad + d^2 = 0 \rightarrow d(2a+d) = 0$$

$$d=0 \times$$

$$d = -\frac{2a}{2}$$

$$q \Rightarrow \frac{a}{2} = bq \rightarrow q = \frac{a}{2b} = \frac{a}{2(a+d)} = \frac{a}{2(-\frac{2a}{2})} = -1$$

Arman

Year:

Month:

Date:

لیان مریدی

Subject : (.....)

$$ac = b^r$$

$$c = aq^r, b = aq \rightarrow 2a - 3b = d = c - 2a$$

$$2a - 3(aq) = aq^r - 2a$$

$$4a - 3aq = aq^r \Rightarrow q^r + 3q - 4 = 0$$

$$\frac{aq^r}{aq^0} = q^r = 1^r, (-2)^r = -4$$

$$(q-1)(q+4) = 0$$

$$\leftarrow q = 1 \text{ or } q = -4$$

$$\frac{a^r}{aq} = \frac{a}{q} = ?$$

$$\frac{aq^0 + aq/a^r}{a^r q^r} = r$$

- 9

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

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

$$\hookrightarrow q = -2a \Rightarrow -\frac{a}{q} = -\frac{1}{2}$$

$$q^r + aq = 2a^r$$

$$q = \frac{-a \pm \sqrt{a^2 + 4a^r}}{2} = a, -2a \leftarrow q^r + aq - 2a^r = 0$$

$$a_r = \sqrt{a_r} \text{ , } a_0 = 2V$$

- 10

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

$$a \times \left(\frac{1}{a}\right)^r = 2V = 2\left(\frac{1}{a}\right)^r = 2V \Rightarrow a = \frac{1}{V} \Rightarrow \frac{1}{V} - \frac{1}{V} = \frac{1}{V}$$

Arman