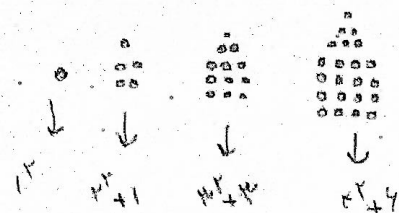


۱۹۱۵

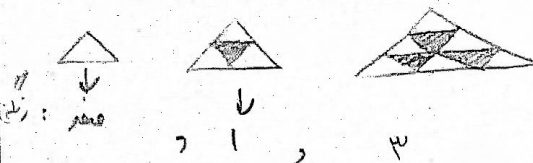
سؤال دوم؟

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$$n^2 + \frac{n(n-1)}{2}$$

$$10^2 + \frac{10(10-1)}{2} = 100 + 45 = 145$$



$$\frac{n(n-1)}{2} = 55$$

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$$n(n-1) = 110$$

$$\rightarrow 11 \times 10 = 110$$

$$\boxed{n=11}$$

سؤال ۱۱؟



$$a_1, a_2, a_3, \dots$$

$$\rightarrow 4n+1 \rightarrow 4 \times 11 + 1 = 44 + 1 = 45$$

$$a_1, a_2, a_3, \dots$$

$$\rightarrow 4n-4 \rightarrow 4 \times 11 - 4 = 44 - 4 = 40$$

$$\text{کل مجموعه ها} = 45 + 40 = 85$$

$$45 + 40 = 85$$

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$$a_n = \frac{(-1)^n}{n}$$

$$a_1 = \frac{-1}{1} = -1$$

$$a_2 = \frac{1}{2}$$

$$a_3 = \frac{-1}{3}$$

$$a_4 = \frac{1}{4}$$

$$\frac{1}{4} - (-1) = \frac{5}{4}$$

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$$b_n = (-3)^n - 7n$$

$$b_3 = (-3)^3 - 7 \times 3 = -27 - 21 = -48$$

$$a_n = -5n + 22$$

$$-5n + 22 = -48$$

$$-5n = -48 - 22 = -70$$

$$n = \frac{70}{5} = 14$$

۵

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

$$a_4 - a_1 = ?$$

$$a_{10} = a_v + 6d \rightarrow a_{10} - a_v = 6d = 12 \rightarrow d = 2$$

(5)

$$a_{10} = a_1 + 9d$$

$$a_4 - a_1 = a_1 + 3d - a_1 = 3 \times 2 = 6$$

$$a_v = a_1 + 9d$$

$$a_1 = v, a_f = 15$$

$$a_f = a_1 + 10d = 15$$

$$10d = 15 - v = 1 \rightarrow d = \frac{1}{10}$$

$$v, v + \frac{1}{10}, v + \frac{2}{10}, \dots$$

(5)

$$b_1 = 3, b_2 = 11$$

$$3, 11, 19, \dots$$

$$\sqrt{10n - 5}$$

$$b_n = 10n - 5$$

$$t_n = \frac{1}{2}, \frac{4}{3}, \frac{10}{9}, \frac{17}{11}, \dots$$

(دستمالی یک تا بیست و یک)

$$t_n = \frac{10n - 5}{10n + 3}$$

$$\frac{10n - 5}{10n + 3} < \frac{1}{2}$$

$$\frac{1}{2} < n < \frac{17}{2} = 8.5$$

$$1 \leq n \leq 4$$

(5)

$$10n + 3 \neq 0$$

$$n = -\frac{3}{10}$$

$$2(10n - 5) > 3(10n + 3)$$

$$10n - 5 > 15n + 9 \rightarrow 10n > 14$$

$$n > \frac{14}{10}$$

$$t_n = \frac{1}{2}, \frac{4}{3}, \frac{10}{9}, \frac{17}{11}, \dots$$

$$t_n = An^2 + Bn$$

$$ax^2 + bx + c$$

$$10A + 5B = ?$$

$$1 \times \frac{1}{2} + 5 \times \frac{10}{9} =$$

$$\frac{1}{2} + \frac{50}{9} = \frac{51}{2} = \frac{51}{2}$$

(5)

$$10A = -1 \rightarrow A = -\frac{1}{10}$$

$$-\frac{1}{10}x^2 + bx + c = 4$$

$$b = 4 + \frac{1}{10} = \frac{41}{10}$$

$$t_n = -\frac{1}{10}n^2 - \frac{41}{10}n - 4$$

$$t_n = n^2 - n - 4$$

نقطه اول

$$a_1 = 1, a_2 = 1$$

$$a_2 = a_1 + d \rightarrow d = 0, d = 0$$

$$1, 1, 1, 1, \dots$$

$$a_n = 0n + 1$$

نقطه دوم از -4 است
C = -4

$$n^2 - n - 4 = 0n + 1$$

$$n^2 = 4n + 5$$

$$n(n - 4) = 5$$

$$\Rightarrow n = 5$$

نقطه سوم

1.