

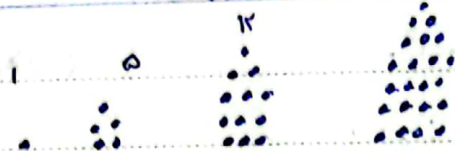
Subject :

تکلیف سری ۱۱

درهم B

کتابخانه

Date :



(۱) (۲) (۳) (۴)

$1^2 + 0$ $2^2 + 1$ $3^2 + 3$

$4^2 + 4$

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

الگوی مربعی - $(n-1)$ الگوی مثلثی

$16 + \frac{4 \times 3}{2} = 22$

سوال ۱ <=

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(۱) (۲) (۳)

$n^2 - 1 = 0$

$n^2 - 3 = 1$

$n^2 - 5 = 3$

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

$1 - 0 = 1$

$4 - 3 = 1$

$9 - 5 = 3$

$\frac{n^2 - n^2 - n}{2} = 0$

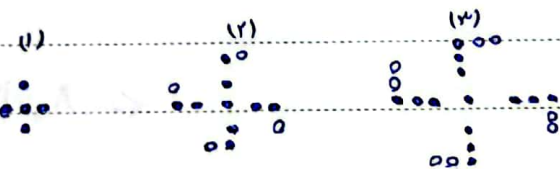
$\frac{n^2 - n^2 - n}{n^2} = 11$

$n(n-1) = 11$

$n-1 = 11$ $n = 12$

سوال ۲ <=

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(۱)

(۲)

(۳)

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

$\frac{1+8}{9} = 1$

$\frac{1+12}{13} = 1$

$a_n = 4n + 1$

(مستطی)

$4 \times 11 + 1 = 45$

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$4 \times 11 + 1 = 45$

$a_n = 4n - 4$

(مربع)

$45 + 40 = 85$

$44 - 4 = 40$

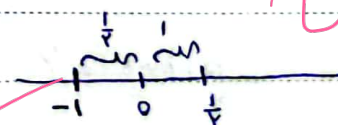
سوال ۳ <=

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

$-1, +\frac{1}{2}, -\frac{1}{3}, +\frac{1}{4}, \dots$

$\max = \frac{1}{2}$ $\min = -1$

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



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سوال ۳ <

$$\frac{(-1)^n - 1}{-2} = -an + 12$$

$$\frac{-1 - 1}{-2} = -an$$

$$n=14$$

$$n=14$$

$$K=14$$

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سوال ۴ <

$$t_1 - t_2 = 12$$

$$t_4 - t_1 = ?$$

$$t_4 + 2d - t_1 = 12 \Rightarrow d = 4$$

$$t_4 = t_1 + 3d$$

$$t_4 - t_1 = 12$$

$$t_4 - t_1 = 12$$

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سوال ۵ <

$$\left. \begin{array}{l} t_1 = 1 \\ t_2 = 10 \end{array} \right\} a_n$$

$$t_4 = t_1 + 3d = 1 + 3 \times 9 = 28$$

$$a_n = 9n - 8$$

$$t_1 = 1 \quad t_2 = 10$$

$$3, 11, \dots$$

$$b_n = 11n - 8$$

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$$3, 11, 19, 27, \dots$$

سوال ۸ <

$$\frac{1}{2}, \frac{4}{5}, \frac{9}{8}, \frac{16}{11}, \frac{25}{14}, \frac{36}{17}, \frac{49}{20}, \frac{64}{23}$$

سوال ۹

$$\frac{1}{2}$$

$$\frac{fn - 1}{2n + 1} = 3$$

$$= 11n - 1 = 4n + 9$$

$$11n - 4n = 1 + 9$$

$$7n = 10 \Rightarrow n = \frac{10}{7}$$

$$n=4$$

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سوال ۹ <

$$t_n = 4, 9, 16, 25, \dots$$

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

$$2A + 2B = ?$$

$$ra = 1 \quad a = 1/4$$

$$An^2 + Bn = 4C = 0$$

$$\frac{1}{4} \times 1/4 + \frac{1}{4} \times 1/4 = \frac{1}{4}$$

$$a + b + c = 4 \Rightarrow b = 1/4$$

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$$t_n = n^2 + bn \rightarrow n=1 \quad 1+b-4 = 4b = -1$$

سوال 1. $k=1$

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

$$t_n = -4, -9, 0, \dots \quad r_1 = 1 \quad a = 1$$

$\begin{matrix} \swarrow & \searrow & \swarrow & \searrow \\ 0 & -4 & -9 & 0 \end{matrix}$

$$= 4 \quad 4 = -4$$



$$t_n = t_r + r_d \quad = 4d = a \quad f_n \cdot d + 0 = f_1$$

$f_1 \quad r_1$

$$= 4 \quad a(n+r_1) = a_n$$

$$a(n+r_1) = n^2 - n - 4$$

$$r_v = n^2 - 4$$

$$r_v = n(n-4)$$

$$= 4 \quad \boxed{n=9}$$

$$\underbrace{a \cdot 9 + r_1}_{=0} = 49$$

$$N - 4 - 9 = 11$$

