

19.05 آفرین

Subject: Year: Month: Date: (دینا ادھی)

① شکل $\Rightarrow$ اندکی درجه ۲
 $\Rightarrow an^2 + bn + c$
 $\begin{matrix} 1 & 2 & 3 & 4 \\ +1 & +4 & +9 & +16 \\ +3 & +5 & +7 & +9 \end{matrix}$
 $\frac{3}{2}n^2 + bn + c$
 $\frac{3}{2}n^2 + bn \Rightarrow \frac{3}{2} + b = 1 \Rightarrow b = -\frac{1}{2}$

$a_n = \frac{3}{2}n^2 - \frac{n}{2} \Rightarrow$ امتحان $\Rightarrow \frac{3}{2} \times 4^2 - \frac{4}{2} = 3 \times 4 - 1 = 9 - 1 = 8$ ✓
 $\frac{3}{2} \times 100 - \frac{100}{2} = 150 - 50 = 100$ شکل دوم

② شکل
 $\begin{matrix} 1 & 2 & 3 & 4 \\ +0 & +1 & +4 & +9 \\ +1 & +3 & +5 & +7 \end{matrix}$
 $\frac{1}{2}n^2 + bn + c$
 $\frac{1}{2}n^2 + bn \Rightarrow \frac{1}{2} \times 1 + b = \frac{1}{2} + b = 0$
 $\frac{1}{2}n^2 - \frac{1}{2}n = 55$
 $\frac{n^2}{2} - \frac{n}{2} = 55$
 $\frac{n(n-1)}{2} = 55 \Rightarrow n = 11$

③ مجموع کل مهره ها و مهره های رنگی در شکل یازدهم
 $n^2 + bn = b = 4 \Rightarrow (11)^2 + (4 \times 11) = 121 + 44 = 165$
 $\begin{matrix} 1 & 2 & 3 & 4 \\ +5 & +7 & +9 & +11 \\ +2 & +2 & +2 & +2 \end{matrix}$
 $5, 9, 13 \Rightarrow fn + 1 \Rightarrow 44 + 1 = 45$
 $165 + 45 = 210$ ✓

تعداد مهره ها = $an = 5, 13, 21, \dots \rightarrow an = 8n - 3 \rightarrow a_{11} = 8(11) - 3 = 85$
 $bn = 5, 9, 13, \dots \rightarrow bn = 4n + 1 \rightarrow b_{11} = 4(11) + 1 = 45$

Sabnam $a_{11} + b_{11} = 85 + 45 = 130$

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Q. 9, 9, 9, 9, 9
 $\begin{matrix} +9 & +9 & +9 & +9 \\ -9 & -9 & -9 & -9 \end{matrix}$

$an^2 + bn + c$

$\Rightarrow \frac{-9}{1}n^2 + bn \Rightarrow \frac{-9}{1} \times 1^2 + b \times 1 = -9 + 1b = 9$

$1b = 18$

$3\left(\frac{-9}{1}\right) + \left(\omega \times \frac{18}{1}\right) = \frac{-9}{1} + \frac{18\omega}{1} = \frac{99}{1} = 99$

$b = 18, \omega$

$an^2 + bn + c \Rightarrow n^2 - n - 9$

$1b + c = -1 \Rightarrow B = -1$

$C = -9$

$a_n = an + b \Rightarrow d = \omega \Rightarrow a_n = 19 + (n-1)\omega$
 $a_1 = 19$ $\omega n + 11$

$n^2 - n - 9 = \omega n + 11 \Rightarrow n^2 - 9n - 20 \Rightarrow (n-9)(n+3)$

$n = 9$

$n = -3$

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

نیز پلین / ولو پلین

(4)

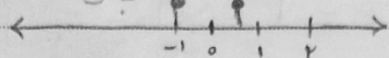
$$n=1 \Rightarrow \frac{-1}{1} = -1$$

$$n=2 \Rightarrow \frac{1}{2}$$

$$n=3 \Rightarrow \frac{-1}{3}$$

$$n=4 \Rightarrow \frac{1}{4}$$

نیز پلین / ولو پلین



$$+ \frac{1}{2} - \left(\frac{1}{3} \right) = \frac{1}{2} + \frac{2}{6} = \frac{5}{6}$$

اضافہ کرنے

$$b_p = (-3)^p - 21 = -27 - 21 = -48$$

(5)

$$-5n + 22 = -48 \Rightarrow -5n = -70 \Rightarrow 5n = 70 \Rightarrow n = 14$$

(2)

$$a_n + b \Rightarrow a_1 + b - (a_7 + b) =$$

(6)

$$a_1 + b - a_7 - b = 12 \Rightarrow a_7 = 12$$

$$a_7 = 2 \times a_4 = 24$$

$$a_4 = \frac{a_7}{2} = 12$$

(2)

$$24 - 12 = 12$$

$$a_1 = a_7 = 7 \quad a_7 = 12 \quad b = -1 \Rightarrow -b = +1$$

(7)

a_1

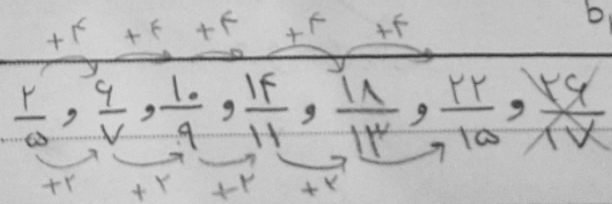
a_7

$$a_1 = b_1 \Rightarrow 7(-1) = b_1 \Rightarrow b_1 = -7$$

(2)

$$a_7 = b_7 \Rightarrow 7 \times 7 - 1 = 48 \Rightarrow b_7 = 48$$

$$b_n = 7n - 1$$



لو پلین از 15

(8)

نیز پلین / ولو پلین

