

یکشنبه
۲۷ تیر

کیا کوئی

۷ ذی الحجہ ۱۴۴۲
week 18 Month 04
July 2021

18

سید اول

$$3n^2 - 1 \quad 3(1)^2 - 1 = 2$$

$$3(2)^2 - 1 = 11 \quad 3(3)^2 - 1 = 26$$

$$3(4)^2 - 1 = 47 \quad 3(5)^2 - 1 = 74$$

$$\{2, 11, 26, 47, 74, \dots\}$$

$$\text{ب) } \frac{r_{n+1}}{n+1} = \frac{r(n) + 1}{1 + n} = \frac{3}{2}$$

$$\frac{r(2) + 1}{2 + 1} = \frac{5}{3} \quad \frac{r(3) + 1}{3 + 1} = \frac{10}{4} = 1$$

$$\frac{r(4) + 1}{4 + 1} = \frac{17}{5} \quad \frac{r(5) + 1}{5 + 1} = \frac{11}{4}$$

$$\frac{r(6) + 1}{6 + 1} = \frac{19}{7}$$

$$\left\{ \frac{3}{2}, \frac{5}{3}, \frac{10}{4}, \frac{17}{5}, \frac{11}{4}, \frac{19}{7}, \dots \right\}$$

مسئله دوم

$$t_n = \frac{(-1)^{n+3}}{\sqrt{n+3}} = \frac{(-1)^{13}}{\sqrt{13+3}} = \frac{-1}{\sqrt{14}} = -\frac{1}{\sqrt{14}}$$

$$2n - \left[\frac{n}{4} \right] = 2(13) - \left[\frac{13}{4} \right] = 24 - \left[\frac{13}{4} \right]$$

$$\left[\frac{13}{4} \right] = 3, 25 \Rightarrow \textcircled{3} \quad 24 - 3 = \textcircled{21}$$

مسئله سوم

$$t_n = 2n - 1 \quad 2n - 1 \mid 0$$

$$2n \mid 1 \rightarrow n \mid \omega \rightarrow 1 \mid n \mid \omega$$

$$(\omega - 1) + 1 = \omega \quad \text{تدریجاً}$$

$$n^2 - 12n + 27$$

مسئله چهارم

$$n^2 - 12n + 27 \mid 0 \rightarrow (n-3)(n-9) \mid 0 \rightarrow \begin{cases} n=9 \\ n=3 \end{cases}$$

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$$3 < n < 9 \rightarrow 12 \mid 1$$

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

مدال سوم

الف) $2n - 1 = 0$

$$2n - 1 = 0 \rightarrow n = \frac{1}{2}$$

ب) $(10 - 1) + 1 = 10$

ب) $n^2 - 14n + 49 = 0$

$$(n - 7)^2 = 0 \rightarrow n = 7$$

$(9 - 1) + 1 = 9$

سوال چهارم

الف) $2n - 14 = 0$

$2n - 14 = 0 \rightarrow n = 7$

ب) $n^2 - 12n + 36 = 0$

$n^2 - 12n + 36 = 0$

$(n - 6)^2 = 0 \rightarrow n = 6$

$$(6 - 6) + 1 = 1$$

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مسوال نمبر ۲۰۹

13

$$t_n = a + (n-1)d$$

14

$$a + 3d = V \quad (1) \quad a + 11d = 22 \quad (2)$$

15

$$(1) - (2) \Rightarrow 8d = -12 \Rightarrow d = -\frac{3}{2}$$

16

$$(1) \Rightarrow a + 3(-\frac{3}{2}) = V \Rightarrow a - \frac{9}{2} = V \Rightarrow a = V + \frac{9}{2}$$

17

$$(2) \Rightarrow \frac{1}{2} = a + 11d = -\frac{9}{2} + 11(-\frac{3}{2}) = -\frac{9}{2} - \frac{33}{2} = -\frac{42}{2} = -21$$

18

$$\frac{1}{2} = -21$$

19

27
08

26
08

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week 19 Month 05
July 2021

4
فوشنبه
مرداد

سوال ششم

الف) $n^2 - 4n + 2$

$$\min_n -\frac{b}{2a} = -\frac{4}{2} = -2$$

$n^2 - 4(3) + 2 = 9 - 12 + 2$

$$\min_n = -1$$

کمترین مقدار برابر با -1 است

ب) $f_n = n^2 + n + 1$

$$\min_n = -\frac{b}{2a} = -\frac{1}{2} = -0.5$$

$3^2 + 3 + 1$

$$\min_n = -1$$

$9 - 3 + 1 = 7$

کمترین مقدار برابر با 7 است

سوال هفتم

$B = -3$

$B = 1$

سه شنبه
 مرداد 5

سؤال هفتم

$$-4, -7, -1, -7, -4, \dots$$

$$a_n = An^2 + Bn + C$$

$$a_1 = -4 \quad a_2 = -7 \quad a_3 = -1$$

$$A(1)^2 + B(1) + C = A + B + C = -4$$

$$A(2)^2 + B(2) + C = 4A + 2B + C = -7$$

$$A(3)^2 + B(3) + C = 9A + 3B + C = -1$$

$$(4A + 2B + C) - (A + B + C) = -7 - (-4) = 3A + B = -3$$

$$(9A + 3B + C) - (4A + 2B + C) = -1 - (-7) = 5A + B = 1$$

$$5A + B - (3A + B) = 1 - (-3) \rightarrow 2A = 2 \rightarrow A = 1$$

$$3(1) + B = -3 \rightarrow B = -6$$

$$1 + C = -4 \rightarrow C = -5$$

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

$$a_n = 10^2 - 4(10) + 1 = 1$$

$$+ \infty \quad \begin{matrix} \nearrow & \nearrow \\ 4 & 13 \end{matrix}$$

$$-4, -1, 1, 21$$

مسئله مستقیم

$$T_n = A_n^2 + Bn + C$$

$$A(1)^2 + B(1) + C = A + B + C = -4$$

$$A(2)^2 + B(2) + C = -1 \rightarrow 4A + 2B + C = -1$$

$$A(3)^2 + B(3) + C = 1 \rightarrow 9A + 3B + C = 1$$

$$(4A + 2B + C) - (A + B + C) = -1 - (-4) \rightarrow 3A + B = 3$$

$$(9A + 3B + C) - (4A + 2B + C) = 1 - (-1) \rightarrow 5A + B = 2$$

$$(5A + B) - (3A + B) = 2 - 3 \Rightarrow 2A = -1 \Rightarrow A = -\frac{1}{2}$$

$$3(-\frac{1}{2}) + B = 3 \Rightarrow -\frac{3}{2} + B = 3 \Rightarrow B = \frac{9}{2}$$

$$A + B + C = -4 \Rightarrow -\frac{1}{2} + \frac{9}{2} + C = -4 \Rightarrow C = -\frac{11}{2}$$

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

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پنجشنبه
مرداد

سوال نهم

$$2a+1 \mid a+4$$

10. حدت سوال $[400, 2a+1], [2a+4, 2a+4]$

$$2a-4 \mid 4-1$$

$$a \mid 3$$

سوال دهم

$$\frac{100}{3} = 33$$

الف) $3 \mid 3$

$$\frac{100}{5} = 20$$

ب) $5 \mid 5$ (تعطیل)

$$\frac{100}{8} = 12.5$$

$$8 \mid 3$$

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week 19 Month 03
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$$\frac{33}{53} + 20 - 4 = 5 \checkmark$$

$$5 \mid 5$$