

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱۰ کلاس دهم ریاضی

الف) $t_1 = 3 \times 1 - 1 = 2$ $t_4 = 3 \times 4 - 1 = 11$ $2, 11, 24, 47, 74$
 $t_2 = 3 \times 2 - 1 = 5$ $t_5 = 3 \times 5 - 1 = 14$
 $t_3 = 3 \times 3 - 1 = 8$ $t_6 = 3 \times 6 - 1 = 17$

ب) $t_1 = \frac{2 \times 1 + 1}{1 + 4} = \frac{3}{5}$ $t_4 = \frac{2 \times 4 + 1}{4 + 4} = \frac{9}{8}$
 $t_2 = \frac{2 \times 2 + 1}{2 + 4} = \frac{5}{6}$ $t_5 = \frac{2 \times 5 + 1}{5 + 4} = \frac{11}{9}$
 $t_3 = \frac{2 \times 3 + 1}{3 + 4} = \frac{7}{7} = 1$

الف) $t_n = \frac{(-1)^n}{\sqrt{n+2}}$ $t_{12} = \frac{(-1)^{12}}{\sqrt{12+2}} = \frac{1}{4}$

ب) $t_n = 2n - \left[\frac{n}{2} \right] \rightarrow t_{12} = 2 \times 12 - \left[\frac{12}{2} \right] = 24$

الف) $t_n = 2n - 1 \rightarrow 2n - 1 < 0 \rightarrow 2n < 1 \rightarrow n < \frac{1}{2} \rightarrow$ ندارد

ب) $t_n = n^2 - 1 \rightarrow (n-1)(n+1) < 0 \rightarrow \frac{n-1}{n+1} < 0 \rightarrow 2, 4, 6, 8, 9$
ندارد

الف) $t_n = 2n - 14 \rightarrow 2n - 14 < 0 \rightarrow n < 7 \rightarrow$ ندارد

ب) $t_n = n^2 - 12n + 17 \rightarrow (n-3)(n-9) < 0 \rightarrow \frac{n-3}{n-9} < 0 \rightarrow 3, 4, 5, 6, 7, 8, 9$
ندارد

$t_4 = 7$
 $t_9 = 22$
 $d = \frac{t_9 - t_4}{9 - 4} = \frac{22 - 7}{5} = 3$
 $t_7 = t_4 - d = 7 - 3 = 4$

$$f(n) = n^2 - 4n + 2 \rightarrow \min \text{ نقطه} \rightarrow n = \frac{-b}{2a} = \frac{4}{2} = 2 \rightarrow f_2 = 2^2 - 4 \times 2 + 2 = -2$$

✓

$$b) f(n) = n^2 + 4n + 1 \rightarrow \min \text{ نقطه} \rightarrow n = \frac{-b}{2a} = \frac{-4}{2} = -2 \rightarrow f_1 = 1 + 4 \times (-2) + 1 = -7$$

در n نزدیک ترین عدد به -2 انتخاب می کنیم.

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$$f(n) = -4, -7, -11, -16, -21, \dots \quad a = \frac{4}{2} = 2 \rightarrow f_1 = -4 = 2 + b - 1$$

$C = \text{مجموعه} = 1 \quad b = -7$

$$f(n) = n^2 - 4n + 1 \rightarrow f_1 = 1 - 4 \times 1 + 1 = -2$$

✓

7

$$f(n) = -9, -1, 7, 17, \dots \quad a = \frac{4}{2} = 2 \rightarrow f_1 = -9 = 2 + b - 1$$

$C = \text{مجموعه} = -7 \quad b = -1$

$$f(n) = 2n^2 - n - 7$$

✓

8

$$\text{بدون استرین} \rightarrow 2a + 1 > a + 4 \rightarrow a > 3$$

✓

9

$$الف) \left[\frac{100}{4} \right] = 25$$

✓

$$ب) \left[\frac{100}{5} \right] = 20$$

$$ج) \left[\frac{100}{10} \right] = 10$$

$$د) 25 + 20 - 10 = 35$$

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