

1) الف) $t_n = 3n^2 - 1$

$1, 2, 11, 24, 47, 80, \dots$

ب) $f_n = \frac{n+1}{n+2}$ $\frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}, \dots$

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

$t_{14} = \frac{-1^{14}}{\sqrt{14+2}} = \frac{-1}{\sqrt{16}} = -\frac{1}{4}$

ب) $t_n = 2n - \left\lfloor \frac{n}{2} \right\rfloor$

$t_{14} = 24 - \left\lfloor \frac{14}{2} \right\rfloor = 24$

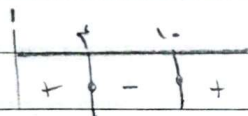
3) الف) $t_n = 2n - 1$

$2n - 1 < 0 \quad 2n < 1 \quad n < \frac{1}{2} \rightarrow \text{ممنوع}$

ب) $n^2 - 14n + 24$

when: $n^2 - 14n + 24 < 0$

$(n-4)(n-10) < 0 \quad 4 < n < 10 \rightarrow \text{ممنوع}$



4) الف) $t_n = 2n - 14$

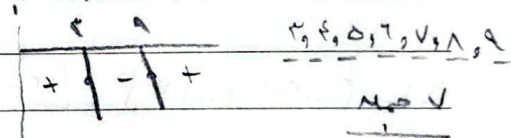
$2n - 14 < 0$

$2n < 14 \quad n < 7$

ب) $t_n = n^2 - 14n + 24$

when: $n^2 - 14n + 24 < 0$

$(n-4)(n-10) < 0$



د) $t_f = 7$
 $t_g = 22$
 $t_p = ?$

$9a + b = 22$

$\ominus 7a + b = 7 \rightarrow 12 + b = 7$
 $b = -5$

$9a = 10$
 $a = \frac{10}{9}$

$t_n = 3n - 5$

$t_p = 9 - 5 = 4$

4) الف) $t_n = n^2 - 9n + 2$

min $\rightarrow \frac{-b}{2a} \rightarrow \frac{9}{2} = 4.5$

نقطه بحرانی $\rightarrow 4.5$

معمولاً

$\frac{-\Delta}{4a} = \frac{-(24 - 4 \times 2)}{4} = \frac{-20}{4} = -5$

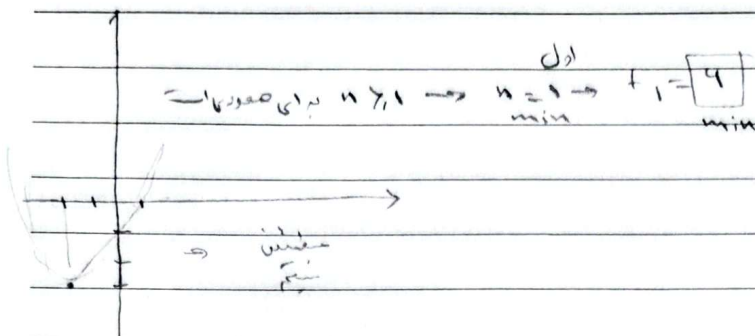
$$4) f_n = n^2 + f_{n+1}$$

سریانه قیاری

$$\min \rightarrow \frac{-b}{2a} = \frac{-f}{2} = -\frac{f}{2}$$

$$n \geq 1$$

$$\frac{-\Delta}{2a} = \frac{-(4-f \times 1)}{2} = \frac{-15}{2} = -\frac{15}{2}$$



$$v) f_n = -4, -7, -9, -7, -4, \dots$$

$$f_{10} = ? \rightarrow -7$$

$$1) f_n = -4, -1, 8, 21, \dots$$

$$C = -7 \quad f_n = 2n^2 - n - 7$$

$$b = -1$$

$$a + b + c = -4$$

$$9) (-\infty, a+4], [a+1, +\infty)$$

$$a+4 \leq a+1$$

$$3 \leq a \rightarrow$$

$$10) 1 < f_n < 100$$

$$\frac{1}{2} < n < \sqrt{200} \rightarrow 14 < n < 14$$

$$11) 1 < a_n < 100$$

$$\frac{1}{2} < n < 10 \rightarrow 1 < n < 10$$

استان

$$12) 1 < a_n < 100$$

$$\frac{1}{10} < n < 41 \rightarrow 1 < n < 41$$

$$13) n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$n(A \cup B) = 33 + 19 - 9 = 43$$

Parsian