

(الف) $t_1 = 2(1)^2 - 1 = 1, t_2 = 2(2)^2 - 1 = 7, t_3 = 2(3)^2 - 1 = 17, t_4 = 2(4)^2 - 1 = 31$
 $t_5 = 2(5)^2 - 1 = 49 \Rightarrow \boxed{1, 7, 17, 31, 49}$

(ب) $t_1 = \frac{2(1)+1}{1+1} = \frac{3}{2}, t_2 = \frac{2(2)+1}{2+1} = \frac{5}{3}, t_3 = \frac{2(3)+1}{3+1} = 1, t_4 = \frac{2(4)+1}{4+1} = \frac{9}{5}$
 $t_5 = \frac{2(5)+1}{5+1} = \frac{11}{6} \Rightarrow \boxed{\frac{3}{2}, \frac{5}{3}, 1, \frac{9}{5}, \frac{11}{6}}$

(الف) $t_{12} = \frac{(-1)^{12}}{\sqrt{12+1}} = \frac{1}{\sqrt{13}} \Rightarrow \boxed{t_{12} = \frac{1}{\sqrt{13}}}$

(ب) $t_{12} = 2(12) - \left[\frac{12}{\sqrt{13}}\right] = 24 - [2, 25] = 24 - 2 = \boxed{22}$

(الف) $t_n < 10 \quad t_1 = 2(1) - 10 = -8, t_2 = 2(2) - 10 = -6, t_3 = 2(3) - 10 = -4, t_4 = 2(4) - 10 = -2$
 $t_5 = 2(5) - 10 = 0 \Rightarrow \boxed{t_1, t_2, t_3, t_4}$

(ب) $n = \frac{14 \pm \sqrt{14^2 - 12}}{2} = \frac{14 \pm 4}{2} \Rightarrow n_1 = 9, n_2 = 5 \Rightarrow 5 < n < 9$

$n = 6, 7, 8 \Rightarrow \boxed{t_6, t_7, t_8}$

(الف) $t_n \leq 14 \quad t_8 = 2(8) - 14 = 2 \Rightarrow \boxed{t_1, t_2, \dots, t_8}$

(ب) $n = \frac{12 \pm \sqrt{12^2 - 10}}{2} = \frac{12 \pm 4}{2} \Rightarrow n_1 = 8, n_2 = 4 \Rightarrow 4 \leq n \leq 8$

$\Rightarrow \boxed{t_4, t_5, \dots, t_8}$

$$t_8 = 8a + b = 7 \quad t_9 = 9a + b = 22$$

$$(9a + b) - (8a + b) = 22 - 7 \Rightarrow a = 15, \quad 8(15) + b = 7 \Rightarrow b = -125 \Rightarrow t_n = 15n - 125$$

$$t_2 = 2(15) - 125 = 30 - 125 = -95$$

$$n = -\frac{r}{r(1)} = 3 \quad t_3 = 3^2 - 4(3) + 2 = 9 - 12 + 2 = -1 \Rightarrow t_2 = -7$$

$$n = -2 \quad n = 1 \quad t_1 = 1 + 8 + 1 = 10 \rightarrow \text{لوحه 10}$$

$$t_2 = 8 + 1 + 1 = 10 \rightarrow \text{لوحه 10}$$

$$1, -4, -7, -10, -13, \dots$$

$$-4, -7, -10, -13, \dots$$

$$+3, +3, +3, +3, \dots$$

$$a = \frac{d}{r} \Rightarrow a = 1$$

$$x^2 + bx + 1 \Rightarrow 1 + b + 1 = -4 \Rightarrow b = -6$$

$$x^2 - 6x + 1 \Rightarrow 1^2 - 6(1) + 1 = -4$$

$$-7, -4, -1, 2, 5, \dots$$

$$-4, -1, 2, 5, \dots$$

$$+3, +3, +3, +3, \dots$$

$$a = \frac{d}{r} \Rightarrow a = 2$$

$$2x^2 + bx - 7 \Rightarrow 2 + b - 7 = -4 \Rightarrow b = 1$$

$$2n^2 - n - 7$$

$$a + 5 = 2a + 1$$

$$a = 3$$

$$(n-1) \times 3 = 94 \quad n-1 = 31 \Rightarrow n = 32$$

الف 32

$$(n-1) \times 5 = 95 \quad n-1 = 19 \Rightarrow n = 20$$

ب 20

$$(n-1) \times 15 = 75 \quad n-1 = 5 \Rightarrow n = 6$$

ج 6

$$32 + 20 - 6 = 46$$

د 46