

14

14, 15 16

سوال 1

$$t_1 = t_0$$

$$t_n = a_n - b$$

$$\frac{a_1 - t_0}{r} = V$$

سوال 1 (2)
 حل 1

$$t_0 = 41$$

$$a_n = a_1 - b$$

$$V_n + r$$

$$r_0 = V_n + r$$

$$14d = V_n \rightarrow n = 14 \checkmark$$

$$V_n + r$$

$$100 \leq V_n + r < 1000$$

$$9V \leq V_n < 99V$$

$$\frac{9V}{V} \leq \frac{V_n}{V} < \frac{99V}{V} = \frac{12.12}{15} \leq n < 142$$

سوال 2 (2)

$$142 - 14 + 1 = 129 \checkmark$$

$$a_n = a_1 + (n-1)d + a_{n+1} = a_1 + nd + a_{n+1} = a_1 + (n+1)d$$

$$r(a_1 + nd) \quad r(a_1 + nd) = -4n + 12 \rightarrow a_1 + nd = -2n + 6$$

$$d = -2 \quad a_1 = 4$$

$$a_{14} + a_n = -2n + (-10) = -2n - 10 \quad a_{14} + a_n = 2a_1 + 2nd = 12 - 4n = -34$$

$$r^k - 1 = r$$

$$r^{k+1} = r$$

$$r \times r^{k+1} = r^k - 1 + r^{k+1} - r$$

$$r^{k+1} - r = r$$

$$r \times r^{k+1} = r^k + r^{k+1} - r$$

$$\Rightarrow y = r^k$$

$$a_1 - a_r = a_{1r} - a_1$$

$$r^{k+1} - (r^k - 1) = (r^{k+1} - r) - r^{k+1}$$

$$(r^k - 1) + r^{k+1} + (r^{k+1} - r) \rightarrow k = r$$

$$r - 1 + 14 - r = 14 \checkmark$$

$$n = 1 \rightarrow a_r + a_r + a_r = 4 \rightarrow a_3 - a_r = -4$$

$$n = r \rightarrow a_r + a_r + a_3 = 0$$

$$a_1 + rd = a_r - d = -4 \rightarrow rd = -4 - d = -5$$

$$a_r + a_r + a_r = 2a_1 + 4d = 4 \rightarrow a_1 = 4$$

سوال 3

(2)

سوال 3 :

$$a_{1r} - a_{1o} = \Delta \quad a_{1o} + a_{1r} = 2\Delta$$

سوال 5: 1

$$\frac{a_{1r} - a_{1o}}{2} = +\Delta \quad a_{1r} - a_{1o} = +10$$

نقته a_{1r} و a_{1o} هم در هم!

$$d = +2\Delta$$

$$a_1 + a_d + a_1 + 11d = 2\Delta \quad 2a_1 + 20d = 2\Delta$$

$$(a_{1r} - a_{1o})$$

$$2a_1 + 20\Delta = 2\Delta \quad 2a_1 = 18\Delta \quad a_1 = \frac{18\Delta}{2} = 9\Delta = 12.5$$

$$a_1 + 20d = 2\Delta \quad 9\Delta + 20d = 2\Delta \quad 20d = -7\Delta \quad d = -0.35\Delta$$

$$S_d = \frac{1}{r} S_{1o} - S_d$$

سوال 4: 1

$$S_d = \frac{1}{r} \Delta t_1 \quad S_d = \frac{1}{r} \Delta (a_1 + v_d)$$

$$\Delta t_r = \Delta (a_1 + 2d) = \frac{1}{r} \Delta (a_1 + v_d) = \Delta a_1 + 10d = \frac{1}{r} \Delta a_1 + 20\Delta d$$

$$10d = \frac{1}{r} \Delta d \quad \frac{1}{r} = -20\Delta d$$

$$\Delta a_1 + 10d = \frac{\Delta}{r} a_1 + \frac{20\Delta}{r} d \rightarrow \frac{10}{r} a_1 = \frac{\Delta}{r} d$$

$$\frac{20\Delta}{r} a_1 - \frac{\Delta}{r} a_1 = \frac{20\Delta}{r} a_1 = \frac{20\Delta}{r} d - \frac{20\Delta}{r} d \quad \frac{20\Delta}{r} a_1 = \frac{\Delta}{r} d \quad \Delta a_1 = \Delta d$$

$$d = 2a_1$$

$$a_1 = \frac{1}{2} d \quad \frac{1}{r} = \frac{1}{2} \quad \frac{1}{r} d = \frac{1}{2} d \quad \left(\frac{\frac{1}{2} d}{\frac{1}{2} d} = \frac{20\Delta}{r} = \frac{20\Delta}{r} \right) \quad \frac{a_r}{a_1} = \frac{2a_1}{a_1} = 2$$

$$t_a = a_1 + 11d$$

$$t_a^2 - t_d^2 = (a_1 + 11d)^2 - (a_1 + 2d)^2$$

سوال 7: 2

$$t_d = a_1 + 2d$$

$$= a_1^2 + 44d^2 - (a_1^2 + 4d^2) = 40d^2 = a_1^2 + 44d^2 - a_1^2 - 4d^2$$

$$= 40d^2$$

$$r d = 10 \quad d = \Delta \quad t_d = t_r - 2d \quad t_a = t_r + 2d$$

$$t_r = a_1 + 11d \quad (t_a - t_d)(t_a + t_d) = (t_r + 2d - t_r + 2d)(t_r + 2d + t_r - 2d) = 4d(2t_r) = 8dt_r$$

$$2(1 - 4\sqrt{3}), 2 + \sqrt{3}$$

$$2 + \sqrt{3} - (2 - 12\sqrt{3}) = +14\sqrt{3}$$

$$2 - 12\sqrt{3}, 2 + \sqrt{3}$$

$$\frac{14\sqrt{3}}{14} = \sqrt{3}$$

سوال 8: 2

$$\frac{r_1 - r}{r_{n+1} - r + 1} = \frac{r_0}{r_n - r}$$

(2) 9 جاب

$$r_1 n = 11$$

$$\frac{11 - r}{n - 1} = \frac{a}{n - 1} = d \quad \frac{a}{n - 1} = \frac{r_0 - 10}{r_n - r_1}$$

~~از آنجا که~~

$$n = 5 \quad \checkmark$$

~~از آنجا که~~

1 ~~از آنجا که~~

1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31

$$d = 2$$

a

$$a_1 + (n-1)d = 11 \quad a_1 = 2 \quad d = 2$$

$$\frac{r_1 - r}{r_n - r} = \frac{r_0}{r_n - r} = r$$

$$r_0 = 11n - 4$$

$$r_4 = 11n \quad n = 5$$

$$r_1 n + r_1 n + r = r + 11$$

(2)

10 جاب

$$r_1 n = \frac{n}{r} \quad r_n = \frac{n}{r}$$

$$a_n + a_{n+r} = (a_1 + (n-1)d) + (a_1 + (n+r-1)d) = 2a_1 + (2n+r-2)d = 2(a_1 + (n+1)d)$$

$$\rightarrow 2a_1 + 11d = 2(a_1 + 9d) \rightarrow n+1 = 9 \quad n = 9$$

$$a_n = a_1 + 9d$$

$$a_n = 2a_1$$

$$a_1 = -d$$

$$a_1 = a_1 + (r-1)d = -d + (r-1)d = (r-2)d$$

$$r-2 = 0 \rightarrow r = 2 \quad d \neq 0$$

$$\rightarrow 12 \rightarrow \text{مادی صفر} \quad a_r = 0 \quad \checkmark$$