

$$t_{11} - t_{10} = \omega \Rightarrow t_1 + 11d - t_1 - 9d = \omega$$

سوال 5

$$t_{11} + t_{10} = 2\omega \quad 2d = \omega \rightarrow d = \frac{\omega}{2}$$

$$\Rightarrow t_1 + 11d + t_1 + 9d = 2\omega$$

$$2t_1 + 20d = 2\omega \rightarrow 2t_1 + \omega = 2\omega$$

$$2t_1 = \omega \rightarrow t_1 = \frac{\omega}{2}$$

$$t_{11} = t_1 + 10d \Rightarrow -11\omega + 10\left(\frac{\omega}{2}\right) = -\frac{11\omega}{2}$$

$$S_1 = \frac{n}{2} [2a + (n-1)d] \Rightarrow \frac{\omega}{2} [2a + 10d] = \omega a + 5\omega d$$

سوال 9

$$S_2 = \frac{\omega}{2} [(a + 2d) + (a + 9d)] = \frac{\omega}{2} [2a + 11d] = \omega a + \frac{11\omega d}{2}$$

$$\omega a + 5\omega d = \frac{1}{2} (\omega a + 11\omega d) \Rightarrow \omega a + 5\omega d = \frac{\omega a}{2} + \frac{11\omega d}{2}$$

$$\omega(a + 10d) = \frac{\omega}{2}(a + 22d) \rightarrow a + 10d = \frac{1}{2}a + 11d$$

$$3a + 4d = 11d$$

$$3a - 11d = 11d - 4d \rightarrow 3a = 17d$$

$$\frac{qr}{a_1} = \frac{a+d}{a} = \frac{a+17a}{a} = \frac{18a}{a} = 18$$

$$t_n = t_{n-1} + 1\omega \rightarrow a + (n-1)d = a + (n-2)d + 1\omega$$

سوال 10

$$t_{n-1} = a + (n-2)d = a + (n-2)\omega$$

$$d(n-1 - n + 2) = 1\omega$$

$$-d = 1\omega \rightarrow d = -\omega$$

$$t_9 = a + (9-1)\omega = a + 8\omega$$

$$t_{10} = a + (10-1)\omega = a + 9\omega$$

$$t_9 - t_{10} = (t_9 + t_{10})(t_9 - t_{10})$$

$a + 8\omega - a - 9\omega = -\omega$

$$t_9^r - t_0^r = r_0 \times (r_a + y_0) = r_0 a + 1100$$

اطمئنان سوال ۷

$$t_v = a + 4 \times 100 \rightarrow a + 100$$

$$\frac{t_9^r - t_0^r}{t_v} = \frac{r_0 a + 1100}{a + 100} = \frac{r_0 (a + 100)}{a + 100} = r_0$$

$$d_{\text{مجموعه}} = r(1 - 4\sqrt{r}), \quad \text{سوال ۸} \quad r + \sqrt{r}$$

$$d_{\text{مجموعه}} = 12 \quad a_1 = r - 12\sqrt{r} \quad a_{12} = r + \sqrt{r}$$

$$r + \sqrt{r} = r - 12\sqrt{r} + 12d$$

$$r + \sqrt{r} - r + 12\sqrt{r} = 12d \rightarrow 13\sqrt{r} = 12d \rightarrow d = \sqrt{r}$$

$$a_1 = r$$

$$a_n = r^n$$

$$r^n - r^{n-1} = r^{n-1}(r - 1)$$

$$\left. \begin{array}{l} a_1 = r \\ a_n = r^n \end{array} \right\} r + \varepsilon_n - r = r_{n-1} \rightarrow (n-1) \Rightarrow n+1 = 11$$

$$r^n = r[(\varepsilon_n - 1) - 1]d \rightarrow r^n = r + \varepsilon_n d - rd$$

$$r^n = (\varepsilon_n - r)d \rightarrow d = \frac{r^n}{\varepsilon_n - r} = \frac{12}{r^n - 1}$$

$$a_{n+1} = a_1 + n \times d \rightarrow 11 - r = n \times \frac{12}{r^n - 1}$$

$$9 = n \times \frac{12}{r^n - 1} \rightarrow 11n - 9 = 12n$$

$$3n = 9 \rightarrow n = 3$$

سوال ۱۰

$$t_n + t_{n+2} = t_1 + t_{14} \rightarrow t_1 + (n-1)d + t_1 + (n-3)d = 2t_1 + 2d(n+1)$$

$$t_1 + 2d + t_1 + 12d = 2t_1 + 12d$$

$$2t_1 + 2d(n+1) = 2t_1 + 12d \rightarrow (2n+2)d = 12d \rightarrow 2n+2 = 12 \rightarrow n = 5$$

$$t_n = \frac{w}{r} \left(\frac{n}{r} \right) \Rightarrow \frac{w t_n}{r} = t_n \rightarrow t_n = w t_\varepsilon \quad \text{بجای اولی}$$

$$t_1 + r d = w(t_1 + w d) \Rightarrow t_1 + r d = w t_1 + w^2 d$$

$$r t_1 + r d = 0 \rightarrow t_1 + d = 0$$

$$d = -t_1$$

$$t_k = t_1 + (k-1)d \rightarrow t_k = d + (k-1)d = \underbrace{(k-1)}_{k-1=0} d$$

! درست است $k=1$ ✓