

$$a_1 = 40$$

$$a_2 = 61$$

$$a_2 = a_1 + 2d = 61 \rightarrow 40 + 2d = 61 \rightarrow d = 10.5$$

$$n = 20 \rightarrow \text{جمله پنجم} = a_1 + (n-1)d = 40 + 19 \times 10.5 = 40 + 199.5 = 239.5$$

$$a_n = 7n + 3 \rightarrow 100 \leq 7n + 3 \leq 999$$

$$\rightarrow 97 \leq 7n \leq 996 \rightarrow \frac{97}{7} \leq n \leq \frac{996}{7}$$

$$\rightarrow 13.85 \leq n \leq 142.28 \rightarrow 14 \leq n \leq 142 \rightarrow 142 - 14 + 1 = 129$$

$$a_{n+1} + a_{n+2} + a_{n+3} = -4n + 12 \rightarrow 3x(a_{n+2}) = -4n + 12$$

چون ۳ جمله متوالی

$$a_{n+2} = -2n + 4$$

$$\left. \begin{array}{l} n=1 \rightarrow a_1 = -1 \\ n=15 \rightarrow a_{15} = -26 \end{array} \right\} -1 + (-26) = -27$$

$$2^x - 1 = a_1$$

$$2^{x+1} = a_2$$

$$2^{2x} - 2 = a_{12}$$

$$\frac{2^x - 1 + 2^x - 2}{2} = 2^{x+1}$$

$$a_1 + a_2 + a_{12} = 3 + 1 + 13 = 27$$

$$2^x + 2^x - 2 = 2^{x+1} \rightarrow 2^x + 2^x - 2 = 2^{x+1} \rightarrow x = 2$$

$$d = \frac{a_{12} - a_{10}}{12 - 10} = \frac{5}{2}$$

$$a_{11} = a_1 + 10d \rightarrow -12.5 + (10 \times \frac{5}{2}) = 37.5$$

$$a_{10} + a_{12} = 20 \rightarrow 2a_1 + 20d = 20$$

$$d = \frac{5}{2} \rightarrow 2a_1 + 25 = 20 \rightarrow 2a_1 = -5 \rightarrow a_1 = -2.5$$

$$\frac{\omega_p + \omega_v + \omega_n + \omega_q + \omega_{10}}{\omega_1 + \omega_p + \omega_r + \omega_f + \omega_b} = \frac{\omega_p(1+d+r_d+\cancel{p_d}+f_d)}{\omega_1(1+d+r_d+\cancel{p_d}+f_d)} = \frac{\omega_p}{\omega_1} = r$$

$$\omega_1 + \omega_d = r\omega_1 \rightarrow r\omega_1 = \omega_d \rightarrow d = \frac{ra}{\omega} \rightarrow \frac{\omega_p}{\omega_1} = \frac{va_1}{\omega a_1} = \frac{v}{\omega} = 1, r$$

$$n=r \rightarrow t_r = t_1 + 1\omega$$

$$n=v \rightarrow t_v = t_r + 1\omega \rightarrow t_v = t_1 + r\omega$$

$$t_v - t_r = r\omega = 1\omega \rightarrow d = \omega$$

$$\frac{(t_q - t_a)(t_a + t_\omega)}{t_v} = \frac{r_d \times r t_v}{t_v} = 1\omega \rightarrow 1 \times \omega = r_0 r_1 r_2$$

$$d = \frac{r + \sqrt{r} - r + 12\sqrt{r}}{1r + 1} = \frac{12\sqrt{r}}{1r} = \sqrt{r}$$

$$d = \frac{rr - r}{rn - r + 1} = \frac{r_0}{rn - r} = \frac{11 - r}{n} \rightarrow r_0 n = rn - 1\omega \Rightarrow n = 1\omega$$

$n=r$

$$\omega_p + \omega_{1v} = \omega_n + \omega_{(n+r)} \Rightarrow r_0 = rn + r$$

$n=1$

$$\rightarrow \omega_p + \omega_{1v} = \omega_n + \omega_{1r}$$

$$\omega_p = 0$$

$$\omega_n = \omega_n = r\omega_r \rightarrow \underbrace{\omega + vd}_{\omega_1} = \underbrace{ra + qd}_{ra_r} \rightarrow ra + rd = 0 \rightarrow \omega + d = 0$$