

$$\begin{aligned} \alpha - \alpha_1 &= \omega \\ \frac{\alpha}{P} + \alpha_1 &= P\omega \\ P\omega &= \omega \\ \boxed{\omega = \frac{\omega}{P}} \end{aligned}$$

$$\begin{aligned} P\alpha_1 + P\omega &= P\omega \\ P\alpha_1 + P\left(\frac{\omega}{P}\right) &= P\alpha_1 + \omega = P\omega \\ \alpha_1 &= -P\omega \\ \frac{\alpha}{P} &= \alpha_1 + P\omega = \frac{-P\omega}{P} + P\omega = -\omega + P\omega = \omega(P-1) \\ \boxed{\alpha_1 = -P\omega} \end{aligned}$$

$$S_1 = \frac{1}{r} (V_{a_1} + (n-1)d)$$

$$S_n = \frac{1}{r} (V_{a_n} + (n-1)d)$$

$$S_1 - S_n = \frac{1}{r} (V_{a_1} + (n-1)d) - \frac{1}{r} (V_{a_n} + (n-1)d) \rightarrow \frac{1}{r} (V_{a_1} + (n-1)d) - \frac{1}{r} (V_{a_n} + (n-1)d) = 0$$

$$1 \cdot a_1 + (n-1)d = a_n + (n-1)d = a_n + (n-1)d$$

$$\frac{1}{r} (a_1 + (n-1)d) = \frac{1}{r} (V_{a_1} + (n-1)d)$$

$$1 \cdot a_1 + (n-1)d = V_{a_1} + (n-1)d$$

$$1 \cdot d = V_{a_1} - a_1$$

$$d = V_{a_1} - a_1$$

$$\frac{a_n - a_1}{n-1} = \frac{V_{a_n} - a_1}{n-1} = \boxed{\mu}$$

[illegible]

$$d = \frac{4 + \sqrt{u}}{14 + 1} = \frac{13\sqrt{u}}{14} - \sqrt{u}$$

$$d = \frac{r(r-1)}{r_{n-1}} = \frac{x \cdot d}{x(r_{n-1})} = \frac{|d|}{r_{n-1}} = \alpha_n + 1 = \alpha_n + n d$$
$$1 = r + n \left(\frac{|d|}{r_{n-1}} \right) = \alpha = \frac{|d| n}{r_{n-1}}$$
$$\frac{1}{\alpha} = \frac{|d| n}{r_{n-1}} = |d| n - q < |d| n$$
$$r_{n-1} = q$$
$$n = r$$

۱. دیکھنا دیکھنا خواہ

$$\alpha_n + \alpha_n + \kappa = \alpha_p + \alpha_{1v}$$

$$n + n + \kappa = p.$$

$$2n = 14$$

$$n = 7$$

$$\alpha_n = \frac{p}{n} \alpha_p = \frac{14}{7} \alpha_p$$

$$\alpha_1 + 7d = 14\alpha_1 + 9d \rightarrow -13\alpha_1 = 2d$$

$$\alpha_1 = -\frac{2}{13}d$$

$$\alpha_n = \alpha_1 (n-1) d = 0$$

$$\alpha_n = -\frac{2}{13}d + nd - d = 0$$

$$\alpha_n = -\frac{2}{13}d + nd = 0$$

$$-2d + 13d = 0$$

$$11d = 0$$

$$n = 11$$

۲۰ آفرین

دیا ناوٹن خواہ

$$a_1 = f_0 \quad \left| \quad a_1 + 0d = f_0 \right. \Rightarrow a_1 = 0d = f_0$$

$$a_1 = 41 \quad \left| \quad a_1 + 3d = 41 \right. \Rightarrow a_1 + 3d = 41$$

$$3d = 41$$

$$d = V$$

$$t_n = f_0 + Vn - V$$

$$t_n = Vn + 3V$$

$$Vn + 3V = 101$$

$$Vn = 101 - 3V$$

$$n = 20$$

$$101 - 3V = 101 - 3 \times 101 = 101 - 303 = -202$$

$$\frac{99V - 101}{V} = 129$$

$$101, 104, 107, \dots, 999$$

$$a_{n+1} + a_{n+2} + a_{n+3} = -4n + 12$$

$$3(a_1 + nd) + (a_1 + (n+1)d) + (a_1 + (n+2)d)$$

$$3a_1 + (3n+3)d = -4n + 12$$

$$3a_1 + 3d = 12$$

$$3d = -4 \Rightarrow d = -\frac{4}{3}$$

$$3a_1 + 3(-\frac{4}{3}) = 12$$

$$3a_1 - 4 = 12$$

$$3a_1 = 16$$

$$a_1 = \frac{16}{3}$$

$$a_n = 4 + (n-1)(-\frac{4}{3}) = -\frac{4}{3}n + \frac{16}{3}$$

$$a_1 = 4 - \frac{4}{3}(1) = \frac{8}{3}$$

$$a_{14} = 4 - \frac{4}{3}(14) = -\frac{40}{3}$$

$$\left\{ -1, -\frac{4}{3}, -\frac{8}{3}, \dots, -\frac{40}{3} \right\}$$

$$\frac{r^n - 1}{r - 1} = \frac{r^{n+1} - 1}{r - 1} - \frac{r^n - 1}{r - 1}$$

$$a_1 + a_2 + \dots + a_n = a_1 + a_2 + \dots + a_n$$

$$r^n - r + r - 1 = r^{n+1} - r^n - r^n + 1 \Rightarrow r^n - 1 = r^{n+1} - r^n - r^n + 1$$

$$r^n - 1 = r^n(r + 1)$$

$$r^n(r + 1) = r^n(r + 1)$$

$$r(r + 1) = r(r + 1) \Rightarrow r = r$$

$$a_n = r^n - 1 = r^n$$

$$a_1 = r^1 - 1 = r - 1$$

$$a_{14} = r^{14} - 1 = r^{14} - 1$$

$$r + 1 + r = r + 1 + r$$