

$$Q_T = \epsilon =$$

$$a \epsilon = a_1 + r d = 41$$

$$\epsilon_n = v n + 1r$$

$$\epsilon + r d = 41$$

$$\epsilon_n = v n + 1r = 1 \cdot n$$

$$r d = 11$$

$$v n = 14$$

$$d = 11$$

$$n = 14$$

$$101 \leq n \leq 999$$

$$\epsilon_n = v n + 9 \epsilon$$

$$\epsilon_n = v n + 9 \epsilon = 999$$

$$n = 119$$

$$r a + (n + n + 1 + n + r) d = -4n + 1r$$

$$r a + r n d + r d = -4n + 1r \quad \left\{ \begin{array}{l} r n d = -4n \\ d = -r \\ r a + r d = 1r \end{array} \right.$$

$$d = -r$$

$$r a - 4 = 1r$$

$$a = 4$$

$$a = 4$$

$$a_n + a_{14} = r a + (14 + 14) d = 1r \times 4 + 1r \times -r = 1r - \epsilon 4 = 1r$$

$$a_n - a_p = d = r^{n+1} - r^n + 1 = r^n (r - 1) + 1 = r^n + 1$$

$$a_{14} - a_n = d = r^{14} - r^n - 1 = r^n (r^{14} - r^n - 1) - 1$$

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$$r^n + 1 = r^n (r^{14} - r^n - 1) - 1$$

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

$$\epsilon = r^n (r^n - r) \Rightarrow \epsilon = r^n - r \times r^n$$

$$r = n$$

$$\left. \begin{array}{l} r^r - 1 = r \\ r^{r+1} = n \\ r^r - r = 1r \end{array} \right\} \Rightarrow \boxed{r\epsilon}$$

$$\cancel{a_1 - a_{1r} = d} \quad a_{1r} - a_{10} = \omega \Rightarrow r d = \omega \Rightarrow d = r_1 \omega$$

$$a_{10} + a_{1r} = r d \Rightarrow r a_1 + r d = r \omega \quad a_1 = -1 r_1 \omega$$

$$a_{r1} = a_{1r} + r d =$$

$$10 - r_1 \omega = -1 r_1 \omega$$

$$\cancel{r a_{10} = r_1}$$

$$\cancel{a_{10} = 10}$$

$$\cancel{a_{1r} = 10} \Rightarrow r d + a_{1r} = 10$$

$$r d = -a$$

$$d = -r_1 \omega$$

$$a_{r1} = a_1 + r d$$

$$-1 r_1 \omega + r_0 (r_1 \omega) = r_{0r} \omega$$

$$\cancel{\frac{d}{r}} (r a + \epsilon d) = \cancel{\frac{1}{r}} \cancel{\frac{d}{r}} (r a + 1 \epsilon d)$$

$$r a + 1 r d = r a + 1 \epsilon d$$

$$r a = r d$$

$$r a = d$$

$$\frac{a_r}{a_1} = \frac{a + d}{a} = \frac{r a}{a} = r$$

$$(t_a + t_d)(t_a - t_d) = (t_v + r_d - t_v + r_d)(t_v + r_d + t_v - r_d) \quad (v)$$

$$\frac{(r t_v)(r_d)}{t_v} = \frac{r t_v \times r_d}{t_v} = r_d$$

$$\begin{matrix} r_d = 10 \\ d = 0 \end{matrix} \Rightarrow t_n - t_{n-r} = 10$$

$$d = \frac{r + \sqrt{r} - r(1 - 4\sqrt{r})}{1r} = \frac{r + \sqrt{r} - r + 4r\sqrt{r}}{1r} = \frac{1r\sqrt{r}}{1r} = \sqrt{r} \quad (1)$$

$$d = \frac{r_r - r}{t_n - r} = \frac{r_d}{t_n - r} = \frac{10}{r_{n-1}} \quad (4)$$

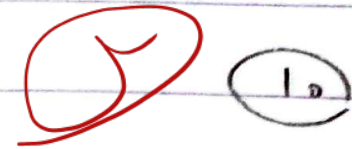
$$t_{n+1} = a + nd = r + \frac{10}{r_{n-1}} \times n = 11$$

$$\frac{10n}{r_{n-1}} = 9 \Rightarrow 10n = 9r_{n-1}$$

$$9 = r_n$$

$$\boxed{r = n}$$

$$a_n + a_{n+\varepsilon} = a_r + a_{rv}$$



$$n + n + \varepsilon = r + rv$$

$$rn + \varepsilon = r$$

$$rn = 19$$

$$n = 1$$

$$a_1 + a_{1r} = a_r + a_{rv}$$

$$a_1 = r a_r \Rightarrow a + vd = r a + r d$$

$$0 = r a + r d$$

$$0 = a + d \Rightarrow \boxed{a_r = 0}$$