

معادله های کاهنده نوشتن

$$a_1 = 4$$

$$a_7 = a_1 + 6d = 21$$

$$\Rightarrow 6d = 21 \Rightarrow d = 7 \Rightarrow a_n = 7n + 3$$

$$\Rightarrow 2 \cdot 1 = 7n + 3$$

$$\Rightarrow 178 = 7n \Rightarrow n = 25$$

$$100 \leq 7n + 3 \leq 999 \Rightarrow 97 \leq 7n \leq 996 \Rightarrow \frac{97}{7} \leq n \leq \frac{996}{7}$$

$$13,91 \leq n \leq 142,21 \Rightarrow 14 \leq n \leq 142 \Rightarrow \frac{142 - 14}{1} + 1 = 129$$

$$n=1 \Rightarrow a_1 + a_2 + a_3 = 3a_1 + 6d = -6(1) + 12$$

$$n=2 \Rightarrow a_1 + a_2 + a_3 = 3a_1 + 6d = -6(2) + 12$$

$$\Rightarrow -3d = 6 \Rightarrow d = -2 \Rightarrow 3a_1 + 6(-2) = 6 \Rightarrow 3a_1 = 18 \Rightarrow a_1 = 6$$

$$a_{17} + a_1 = 2a_1 + 22d = 2(6) + 22(-2) = -34$$

$$a_{17} - a_1 = 16d$$

$$a_1 - a_2 = -d$$

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

$$\Rightarrow 2^{2x} + 2^x(-3) - 4 = 0 \Rightarrow (2^x - 4)(2^x + 1) = 0$$

$$\Rightarrow \begin{cases} 2^x = -1 \\ 2^x = 4 \Rightarrow x = 2 \end{cases}$$

$$2^2 - 1 + 2^{2+1} + 2^{2(2)} - 2 = 4 - 1 + 8 + 16 - 2 = 25$$

$$a_{1,r} - a_{1,o} = \delta \Rightarrow a_{1,o} + 1d - (a_{1,o} + r d) = \delta \Rightarrow r d = \delta \quad (4)$$

$$\Rightarrow d = +r, \delta \Rightarrow a_{1,o} + a_{1,r} = 2\delta \Rightarrow r a_{1,o} + r d = 2\delta \Rightarrow$$

$$r a_{1,o} + r \cdot (+r, \delta) = 2\delta \Rightarrow r a_{1,o} = -\delta \Rightarrow a_{1,o} = -1r, \delta$$

$$\Rightarrow a_{1,r} = -1r, \delta + r \cdot (+r, \delta) = \boxed{+r^2, \delta}$$

$$\frac{S_o}{S_r - S_o} = \frac{1}{r} \Rightarrow \frac{\frac{\delta}{r}(r a_{1,o} + (o-1)d)}{\frac{1}{r}(r a_{1,o} + (1-1)d) - \frac{\delta}{r}(r a_{1,o} + (o-1)d)} = \frac{1}{r} \quad (5)$$

$$\Rightarrow \frac{o a_{1,o} + 1 \cdot d}{1 \cdot a_{1,o} + r d - o a_{1,o} - 1 \cdot d} = \frac{1}{r} \Rightarrow 1 \delta a_{1,o} + r d = o a_{1,o} + r d$$

$$\Rightarrow 1 \cdot a_{1,o} = \delta d \Rightarrow d = r a_{1,o} \Rightarrow \frac{a_r}{a_1} = \frac{a_{1,o} + d}{a_{1,o}} = \frac{a_{1,o} + r a_{1,o}}{a_{1,o}} = \frac{r a_{1,o}}{a_{1,o}} = r$$

$$t_n = t_n - r + 1 \delta \Rightarrow t_n - t_{n-r} = 1 \delta \Rightarrow r d = 1 \delta \Rightarrow d = \delta \quad (v)$$

$$\frac{t_q^r - t_o^r}{t_v} = \frac{(t_q - t_o) \cdot (t_q + t_o)}{t_v} = \frac{r(\delta)}{r} = 1$$

$$t_q + t_o = t_v + t_v = 2t_v$$

$$r d = 1(\delta) = \underline{\underline{\epsilon}}$$

$$\frac{2 + \sqrt{r} - r(1 - 4\sqrt{r})}{1r+1} = d \Rightarrow \frac{2\sqrt{r} - r + 4r\sqrt{r}}{1r} = d$$

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$$\Rightarrow 4r\sqrt{r} = 4rd \Rightarrow d = \sqrt{r}$$

$$a_{n+1} = a_1 + (n-1)d = 11, \quad d = \frac{r_2 - r_1}{r_{n-1} - r_{n-1}} = \frac{10}{r_{n-1}}$$

②

$$\Rightarrow 2 + n\left(\frac{10}{r_{n-1}}\right) = 11 \Rightarrow \frac{10n}{r_{n-1}} = 9 \Rightarrow 10n = 11n - 9 \Rightarrow$$

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$$r_n = 9 \Rightarrow n = 2$$

$$a_n + a_{n+r} = a_r + a_{1r} \Rightarrow 2a_1 + (n-1+n+r)d = 2a_1 + rd \quad (1)$$

$$\Rightarrow 2n + r = 11 \Rightarrow n = 1$$

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$$a_n = r a_{\frac{n}{r}} \Rightarrow a_1 = r a_r \Rightarrow a_1 + rd = r a_1 + r(rd) \Rightarrow d = -a_1$$

$$a_n = a_1 + (n-1)d \Rightarrow a_1 + (n-1)(-a_1) = 0 \Rightarrow a_1(1-n) = 0$$

$$\Rightarrow 1-n = 0 \Rightarrow n = 1$$

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