

$$\frac{a_y + d_v + a_n + d_q + a_{10}}{a_1 + d_r + d_p + a_s + d_0} = \gamma \Rightarrow \frac{a_y(1 + \alpha \cdot \cancel{V_d} \cdot \cancel{V_d} \cdot \cancel{V_d})}{a_1(1 + \alpha \cdot \cancel{V_d} \cdot \cancel{V_d} \cdot \cancel{V_d})} = \frac{a_1 + \alpha \cancel{V_d}}{a_1} = \gamma \Rightarrow a_1 + \alpha \cancel{V_d} = \gamma a_1$$

$$\gamma a_1 = \alpha \cancel{V_d} \Rightarrow \cancel{V_d} = \frac{\gamma a_1}{\alpha}$$

$$\frac{a_y}{a_1} = \frac{a_1 + \frac{\gamma a_1}{\alpha}}{a_1} = \frac{\gamma a_1}{\alpha a_1} = \frac{\gamma}{\alpha}$$

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$$\frac{t_n - t_{n-\gamma}}{n - n + \gamma} = \frac{\omega}{\gamma} \Rightarrow \omega = \omega \quad t_p = t_1 + \omega \rightarrow t_1 = t_1 + \omega \rightarrow \gamma t_1 = \omega \rightarrow t_1 = \frac{\omega}{\gamma} = \frac{\omega}{\gamma}$$

$\omega = \gamma \cancel{V_d} = \gamma \cancel{V_d}$

$$\frac{(t_q - t_0)(t_q + t_0)}{\cancel{t_v}} = \omega \cancel{V_d} = 1 \cdot \omega = \gamma \cancel{V_d}$$

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$$\alpha = \frac{\gamma \sqrt{\gamma} - \gamma + 1 \sqrt{\gamma}}{\gamma + 1 = \gamma} = \frac{\gamma \sqrt{\gamma}}{\gamma} = \sqrt{\gamma}$$

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$$\alpha = \frac{\gamma \gamma - \gamma}{\gamma_n - \gamma_1} = \frac{\gamma_0}{\gamma_n - \gamma}$$

$$t_{n+1} = 11 \rightarrow \gamma \cdot (n + \frac{\gamma_0}{\gamma_n - \gamma}) = 11 \rightarrow \frac{\gamma_0 n}{\gamma_n - \gamma} = 9 \rightarrow \gamma_0 n = \gamma \gamma_n - \gamma \rightarrow \gamma_n \rightarrow n = \frac{\gamma}{\gamma} = 1$$

$\gamma \cdot n = \gamma \gamma_n - \gamma$

$n = \gamma$

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$$t_n + t_{n+\gamma} = t_{1v} + t_{\gamma} \rightarrow n + n + \gamma = 1v + \gamma \rightarrow \gamma n + \gamma = \gamma_0 \rightarrow \gamma n = \gamma \rightarrow n = 1$$

$$t_n = \gamma t_{\gamma} \rightarrow t_1 + \gamma \cancel{V_d} = \gamma t_1 + \gamma \cancel{V_d} \rightarrow -\gamma t_1 = \gamma \cancel{V_d} \rightarrow \cancel{V_d} = -t_1 \rightarrow \cancel{V_d} = 0 \rightarrow a_r = 0$$

~~$a_r = \gamma t_{\gamma} \rightarrow t_1 + \gamma \cancel{V_d} = \gamma t_1 + \gamma \cancel{V_d} \rightarrow -\gamma t_1 = \gamma \cancel{V_d} \rightarrow \cancel{V_d} = -t_1 \rightarrow \cancel{V_d} = 0 \rightarrow a_r = 0$~~

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$$a_1 = 10, a_2 = 91, d = \frac{91 - 10}{2 - 1} = \frac{81}{1} = 81 \rightarrow a_n = 10 + (n-1)81 = 81n - 71$$

$$81n - 71 = 1001$$

$$81n = 1072$$

$$(n = 13)$$

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$$a_n = 81n - 71 \rightarrow$$

$$100 \leq 81n - 71 \leq 999 \rightarrow 171 \leq 81n \leq 1070 \rightarrow 21 \leq n \leq 132$$

$$132 - 21 + 1 = 112$$

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$$a_1 + a_2 + a_3 = 9 \rightarrow a_1 = 2 \rightarrow$$

$$a_1 + a_2 + a_3 = 0 \rightarrow a_1 = 0, a_2 = 2 \rightarrow a_3 = -2 \rightarrow a_4 = a_1 + 2a_2 = 4, a_5 = a_1 + 2a_3 = -2 \rightarrow a_6 = 8$$

$$a_n = 2 + (n-1) \cdot 2 = 2n \rightarrow a_{17} + a_{18} = 34 + 36 = 70$$

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$$\frac{2^x - 1 + 2^{2x} - 1}{2} = 2^{2x+1} - 2^{x+1} \rightarrow 2^{2x} - 2^x = 2^{2x+1} - 2^{x+1} \rightarrow x = 1 \rightarrow 2^1 - 1 + 2^2 - 1 = 5$$

$$a_2 + a_8 + a_{14} = 5 + 17 + 29 = 51$$

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$$d = \frac{a_{12} - a_1}{12 - 1} = \frac{10}{11} \rightarrow 2a_1 + 11d = 10 \rightarrow 2a_1 + 11 \cdot \frac{10}{11} = 10 \rightarrow a_1 = 0$$

$$a_{11} = a_1 + 10d = 0 + 10 \cdot \frac{10}{11} = \frac{100}{11}$$

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