۶-

جملات $a_3 - a_4 - a_5 - a_6 - a_7 - a_8 - a_9$

عددی / هندسی: $a_3 - a_7 - a_9$

متوالی: $a_1+2d \;/\; a_1+6d \;/\; a_1+8d$

$(a_1+2d)\times(a_1+8d) = a_1^2+10da_1+16d^2$

$(a_1+6d)^2 = a_1^2+36d^2+12a_1d$

$2a_1d+20d^2=0 \to a_1+10d=0 \to a_1=-10d$

$a_1+2d \to -10d+2d$ $\quad\times\frac{1}{2}\qquad q=\frac{1}{2}$

$a_1+6d \to -10d+6d$ $\quad\times\frac{1}{2}$

$a_1+8d \to -10d+8d$

$-10d,\ -9d,\ -8d$

$+1 \qquad d=1$

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$a_2=a_1+d \to$

$a_4=a_1+3d \qquad (a_1+3d)^2=a_1^2+9d^2+6a_1d$

$a_8=a_1+7d \qquad (a_1+d)(a_1+7d)=a_1^2+8a_1d+7d^2$

$a_1=d$

$q=\frac{a_1+3d}{a_1+d}=\frac{4d}{2d}=2 \to q=2$

$a_{10}=a_1q^9 \to \frac{1}{4}\times 2^9 = 2^7=128$

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$a,\ ar,\ ar^2,\ ar^3,\ \dots$

$a,\ 3ar,\ 2ar^2,\ ar^3$

$2(2ar^2)=4ar^2=3ar+ar^3$

$\div a \to a\neq 0 \qquad r\neq 1$ ← دنباله غیرثابت

$r^3-4r^2+3r=0 \leftarrow 4r^2=3r+r^3$

$\to r(r^2-4r+3) \to r(r-3)(r-1)$

$r=3,\ r=1$

$\boxed{r=3}$

$\mu, \frac{V}{F}, \ldots \quad -\gamma \quad d = \frac{-1}{F}$

$\alpha_F = \mu - \frac{\mu}{F} = \frac{\Delta}{F} \quad -\gamma \quad \alpha_F + K$

$\alpha_\Lambda = \mu - \frac{V}{F} = \frac{1}{F} \quad -\gamma \quad \alpha_\Lambda + K$

$\alpha_{1\mu} = \mu - \mu = \frac{-F}{F} = -1 \quad -, \alpha_{1\mu} + K$

$\alpha_{1\mu} + K, \alpha_\Lambda + K, \alpha_F + K$

$(\alpha_\Lambda + K)^\mu = \alpha_\Lambda^\mu + K^\mu + \mu K \alpha_\Lambda \quad -\gamma \quad K^\mu + \frac{1}{\mu} K + \frac{1}{1\Delta}$

$(\alpha_{1\mu} + K)(\alpha_F + K) - \gamma (K-1)(K + \frac{\Delta}{F}) = K^\mu + \frac{1}{F} K - \frac{\Delta}{F}$ }=

$\frac{1}{1\Delta} + \frac{1}{\mu} K = \frac{1}{F} K - \frac{\Delta}{F} \quad -\gamma \quad \frac{1}{F} K = -\frac{\Delta}{F}$

$\frac{1}{F} K = \frac{-\mu 1}{1\Delta} \quad -\gamma \quad \boxed{K = -\frac{\mu 1}{F}} \quad K = -\Delta$

$\frac{\alpha_\Lambda + K}{\alpha_F + K} = \frac{\frac{1}{F} - \frac{\mu 1}{F}}{\frac{\Delta}{F} - \frac{\mu 1}{F}} = \frac{\frac{-\mu_0}{F}}{\frac{-1\Delta}{F}} = \frac{-\mu_0}{-1\Delta} = \boxed{\frac{\Delta}{F}}$

$\alpha_F \quad \alpha_V$