دنیا ادهمی‌فر دختر B

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① $t_n = 5, 9, 13, 17$ (+4, +4) $\Rightarrow t_n = 4n+1$

$t_{10} = 40+1 = 41$

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② $S_{10} = 5(9+42) = 240$

$t_n = 4n+2 \Rightarrow t_{10} = 42$

$4\times 8 = 32 \leftarrow$ آخرین جمله $\Rightarrow 496 \Rightarrow$ 118, 122, 126, 130 — 496

a_1: $29\times 4+2 = 118$ ، a_{30}: 122 ، a_{31}: 126

$a_{32} \to 130$

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③ $1+\sqrt{3}, 2, 3-\sqrt{3}, \ldots \longrightarrow d = 2-1-\sqrt{3} = 1-\sqrt{3}$

$a_{25} - a_{23} = a+24d - a - 22d = 2d \Rightarrow 2(1-\sqrt{3}) = 2-2\sqrt{3}$

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④ $a_n = 5^{3x}$ ، 3×25^{x} ، $5^{y} \Rightarrow 3\times 5^{2x} = \frac{5^{2x}+5^{y}}{2} = 3\times 5^{2x} = \frac{5^{2x}+5^{4-x}}{2} \Rightarrow \frac{5^{2x}(1+5^{4-3x})}{2}$

$b_n = x, 2, y \to 4 = x+y \Rightarrow y = 4-x \Rightarrow 3 = \frac{1+5^{4-3x}}{2} \Rightarrow 6 = 1+5^{4-3x}$

$3 = xy \leftarrow y = 3 \leftarrow \boxed{x=1}$

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⑤ $4x-2 = 2x-4+6x \Rightarrow 4x-2 = 8x-4 \Rightarrow -4x = -2 \Rightarrow x = \frac{1}{2}$

$-3, 0, 3 \Rightarrow 3n-6 = a_n \Rightarrow a_4 = 12-6 = 6$

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⑥ $3, 5, 7 \to a_n = 2n+1 \Rightarrow a_{20} = 41$

$b_n = 2, 5, 8 \Rightarrow 3n-1 \Rightarrow 59$

دقت کن $n \le 7$

$G_n = 6n-1 \Rightarrow 6n-1 < 41$ ، $6n < 42$ ، $\boxed{n < 7}$ وجود دارد

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⑦ $a_1+a_2+a_3 = 21 \Rightarrow 3a+3d = 21 \Rightarrow a+d = 7$

$a_1+a_3+a_5 \Rightarrow 3a+6d = 105 \Rightarrow a+2d = 35$

$\begin{cases} a+d = 7 \\ a+2d = 35 \end{cases} \Rightarrow a = 21$

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$\frac{a_3-a_2+a_1}{a_1} = \frac{a_1+2d-a-d+a}{-21} = \frac{d+a}{-21} = \frac{7}{-21} = -\frac{1}{3}$

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⑧ $a_1+a_2+a_3 = 15 \Rightarrow 3a+3d = 15 \Rightarrow a+d = 5$

$a_4+a_5 = 25 \to 2a+7d = 25$

$a+9d \Rightarrow 2+27 = 29$

$\begin{cases} a+d = 5 \\ 2a+7d = 25 \end{cases} \Rightarrow d = 3$ ، $a = 2$

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⑨ $S_9 = 9S_3 \Rightarrow \frac{9}{2}(2a_1+(9-1)d) = 9\times\frac{3}{2}(2a_1+2d) \Rightarrow -2a = -5d$

$2a_1+8d = 6a_1+6d$

$4a_1 = 2d \to d = 2a_1$

۱,۵ $a = \frac{5}{2}d$

$\frac{a_{20}}{a_7} = \frac{a+19d}{a+6d} \Rightarrow \frac{\frac{5d+38d}{2}}{\frac{5d+12d}{2}} = \frac{43d}{17} = \frac{43}{17}$ ، $\frac{a_{19}}{a_7} = \frac{39a_1}{13a_1} = 3$

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⑩ $a_1 = 11$ ، $a_7 = 35 \to a+6d \Rightarrow 11+6d = 35 \Rightarrow \boxed{d = 4}$

$a_4 = 16+7 = 23 \rightsquigarrow a_n = 4n+7$

$b_n = 38+(4-1)d = 23 \to 38+3d = 23 \to 3d = -15 \Rightarrow \boxed{d = -5}$

$b_n = -5n+43$ ، $\frac{13-38}{n+1} = -5 \to n = 4$ واسطه ۴

درج واسطه $\Rightarrow -5 = \frac{38-13}{n+1} \Rightarrow -5n = 30 \Rightarrow n = 6$