آزمایشی

۱) الف) $t_n = 2n+1$ ب) $t_{10} = 21$

۲) الف) $S_{10} = 5(19+9\times 4) = 245$

ب) $t_{29}+t_{30}+t_{31}+t_{32} = 4a+114d = 4\times 3+114\times 4 = 468$

۳) $d = 1-\sqrt{3}$ $t_{23}-t_{19} = -4d = 4\sqrt{3}-4$

$t_{23} > t_{20}$

۴) $a_n: d^{2n}, 2\times d^{2n}, 3\times d^{2n} \Rightarrow d^{2n+1} = d^y \to y = 2n+1 \Rightarrow$

$b_n: n, 4, 2n+1 \Rightarrow 2n+1 = 4 \Rightarrow n=1, y=3 \Rightarrow xy = 3$

۵) $d=2 \Rightarrow t_2 \leftarrow 4n = 2n+2 \to 2n = n+1 \to n = \frac{1}{2} \Rightarrow t_4 = 4n+2 = 4$

۶) $a_n: 2, 5, 8, \dots, 41 \to a_n = 3n+1$

$b_n: 4, 6, 8, \dots, 69 \to b_n = 2n-1$

مشترک: $c_n = 4n-1 \to 4n-1 \leq 41 \to n \leq 10$ جمله

۷) $2a_1+2d = 21 \to a+d = 7$

$2a_1+6d = 105 \to a_1+3d = 35$ $\to d=28, a=-21 \Rightarrow \frac{a_2-a_3+a_1}{a_1} = \frac{-21-28}{-21} = \frac{-1}{3}$

۸) $2a_1+2d = 15 \to a+d = 5$

$2a_1+6d = 25$ $\to 5d = 10 \to d = 2, a = 3 \to t_{10} = 29$

۹) $\frac{9}{2}(2a+8d) = \frac{27}{2}(2a+2d) \to 2a+8d = 6a+6d \to 2d = 4a \to d = 2a$

$\to \frac{a_{21}}{a_{12}} = 3$

۱۰) $6d = 24 \to d = 4 \to t_4 = 24 \Rightarrow 28, a, b, 24, \dots \Rightarrow d = -4$

$\to -4 = \frac{-24}{n+1} \Rightarrow n = 5$