نام و نام خانوادگی: پیمان یزدی .... پاسخنامه تشریحی تکلیف شماره ۱۲ کلاس دهم

۱۸/۲۵

الف) $5, 9, 13, 17, \dots$ (اختلاف‌ها: $4, 4, 4$) $\quad d=4 \to an+b \to \boxed{4n+1}$ ✓

ب) $40+1=\boxed{41}$ ✓

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الف) $6, 10, 14, 18, \dots$ (اختلاف‌ها: $4, 4, 4$) $\to d=4 \to an+b \to 4n+2$

$t_1=6,\ t_{10}=42 \Rightarrow \frac{n}{2}(a_1+a_{10})=S_{10} \to 5(6+42)=5(48)=\boxed{240}$ ✓

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ب) $4n+2 \to a_8+a_9+a_{10}+a_{11}=\boxed{160}$ (34, 38, 42, 46)

$a_{29}+a_{30}+a_{31}+a_{32}=$
$2(a_1+a_{60})=2(2a_1+59d)=2(248)=\boxed{496}$

$1+\sqrt{3},\ 2,\ 2-\sqrt{3}$ (اختلاف‌ها: $1-\sqrt{3},\ 1-\sqrt{3}$) $\quad d=1-\sqrt{3} \to an+b \to n-n\sqrt{3}+2\sqrt{3}$

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$a_{25}=25-25\sqrt{3}+2\sqrt{3}=25-23\sqrt{3}$
$a_{23}=23-23\sqrt{3}+2\sqrt{3}=23-21\sqrt{3}$
$\Big\}\ a_{25}-a_{23}=25-23\sqrt{3}-23+21\sqrt{3}=\boxed{2-2\sqrt{3}}$ ✓

$a_n=5^{2x},\ 3\times5^{2x},\ 5^{y},\dots \to \frac{5^{2x}+5^{y}}{2}=3\times5^{2x} \Rightarrow 5^{2x}+5^{y}=6\times5^{2x} \to 1+\frac{5^{y}}{5^{2x}}=6 \Rightarrow \frac{5^{y}}{5^{2x}}=5 \Rightarrow 5^{y}=5^{2x+1} \Rightarrow y=2x+1$

$b_n=x,\ 2,\ y,\dots \to \frac{x+y}{2}=2 \Rightarrow x+y=4$

$y=2x+1,\ x+y=4 \Big\} \Rightarrow 3x+1=4 \Rightarrow 3x=3 \Rightarrow \boxed{x=1},\ \boxed{y=3}$

$x\times y=1\times3=\boxed{3}$ ✓

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$2m-4,\ 2m-1,\ 6m,\dots \Rightarrow \frac{2m-4+6m}{2}=2m-1 \Rightarrow 8m-4=4m-2 \Rightarrow$

$4m=2 \Rightarrow m=\frac{1}{2} \Rightarrow -3,\ 0,\ 3,\dots$ (اختلاف‌ها: $3, 3$) $\to d=3 \to an+b \to \boxed{3n-6}$

$a_4=12-6=\boxed{6}$ ✓

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$14 + a_5 = 105 \Rightarrow a_5 = 91 \rightarrow 91 + a_1 = 2a_3 \rightarrow$

$a_1 + a_3 + a_5 = 105$
$a_1 + a_2 + a_3 = 21$ } $\Rightarrow 105 - 21 = a_5 - a_2$ (84)

$\frac{91}{2} + \frac{a_1}{2} + a_1 = 24$ ... $45.5 + \frac{3}{2}a_1 = 24 \rightarrow \frac{3}{2}a_1 = -21.5 \Rightarrow$

1,75

سوال ۷

$3a_1 = 63 \rightarrow \boxed{a_1 = 21}$

$\frac{3}{2}(a_1 + a_3) = 21 \Rightarrow a_1 + a_3 = 14 \Rightarrow \boxed{21, 14 = a_3} \Rightarrow$ $a_3 - a_2 + a_1 =$

$a_1 + a_3 = 14 \rightarrow a_3 = -7$

$-7 - 7 + 21 = 7$, $a_1 = 21$ } $\Rightarrow \boxed{a_3 - a_2 + a_1 \xrightarrow{\text{برابر}} a_1}$ $-\frac{1}{3}$

$b_n = 2, 5, 8, 11, 14, 17, 20, \ldots$
$a_n = 3, 5, 7, 9, 11, 13, 15, 17, \ldots$ } $5, 11, 17, \ldots \rightarrow 6n - 1$

$3n - 1 \rightarrow b_{20} = 59$
$2n + 1 \rightarrow a_{20} = 41$

$6n - 1 \leq 41 \Rightarrow 6n \leq 42 \Rightarrow \boxed{n \leq 7}$

۷ جمله مشترک

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سوال ۶

$5, 11, 17, 23, 29, 35, 41, 47$

$a + (a + d) + (a + 2d) = 15 \Rightarrow a + d = 5$ (1)
$3a + 3d$

$a_{10} = a_2 + 8d = 5 + 24 = 29$

$(a + 3d) + (a + 4d) = 25 \Rightarrow 2a + 7d = 25$ (2)
$2a + 7d$

1,5

$d = 3$

(1),(2) } $\Rightarrow a = 5 - d \Rightarrow 10 - 2d + 7d = 25 \Rightarrow 5d = 15 \Rightarrow \boxed{d = -3}$, $\boxed{a = 8}$
$10 - 5d$

$a_{10} = a + 9d = 8 - 27 = \boxed{-19}$

$S_n = \frac{n}{2}(2a + (n-1)d)$ $9S_3 = S_9$ $9 \times \frac{3}{2}(2a + 2d) = \frac{9}{2}(2a + 8d)$

$\frac{27}{2}(2a + 2d) = \frac{9}{2}(2a + 8d) \Rightarrow 27(2a + 2d) = 9(2a + 8d) \rightarrow$

$54a + 54d = 18a + 72d \rightarrow 54a - 18a = 72d - 54d$ $2a = d$ $a_n = a + (n-1)d$
$36a$ $18d$

$a_{20} = a + 19d = a + 19(2a) = 39a$ $a_7 = a + 6d = a + 6(2a) = 13a$

$\frac{39a}{13a} = \boxed{3}$

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$a_1 = 11$ $a_7 = 35$ $7 - 1 = 6$ $35 - 11 = 24$ $24 \div 6 = 4 = d$ $4n + 7 \rightarrow a_4 = 23$

$b_1 = 38$ $b_4 = 23$ $4 - 1 = 3$ $38 - 23 = 15$ $15 \div 3 = 5$ $\Rightarrow d = -5$

روش دوم به روش حل مسئله

$-5n + 43 = 13 \rightarrow -5n = -30 \Rightarrow \boxed{n = 6}$

1 2 3 4 5 6
38 13

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$\boxed{4}$ واسطه بین آن باید قرار داد