

$$\omega, 9, 13, 17$$

$$d, 4$$

$$e_{n+1} \quad (الف)$$

$$(2 \times 10) + 1 \times 21$$

$$t_n = f_n + 2 \quad S_{10} = \frac{10}{2} (f_1 + f_{10}) = 5(f_1 + 245)$$

$$(2) \quad (الف)$$

$$f_1 = 42$$

$$f_1 = 4$$

$$f_1 + f_2 + \dots + f_{10} = \frac{10}{2} (f_1 + f_{10}) = 5 \times 249 = 1245$$

$$(ب)$$

$$[(9 \times 4) + 2] + [(2 \times 4) + 2]$$

$$(3)$$

$$1 + \sqrt{2}, 2, 3 - \sqrt{2}$$

$$d = \sqrt{2} + 1$$

$$t_1 + 2d, t_2$$

$$2d = -2\sqrt{2} + 2$$

$$\text{if } n \in \mathbb{N} : a_n = 25, 15, 5 \quad \left\{ \begin{array}{l} \text{if } y \in \mathbb{N} : a_n = 25, 15, 5 \\ b_n = 1, 2, 3 \end{array} \right. \quad \checkmark, \quad n, y \in \mathbb{N}$$

$$(4)$$

$$2x - 2, 2x - 1, 9x, t_x$$

$$\left\{ \begin{array}{l} -2, 0, 2, \dots, t_x \in \mathbb{Z} \end{array} \right.$$

$$(5)$$

$$\therefore 2x - 1 + 3 = 9x \Rightarrow f(x) = 2 \Rightarrow x = 0/5$$

$$a_n: 3, 2, 1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 \rightarrow a_1 = 41$$

$$(6)$$

$$b_n: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 \rightarrow b_1 = 59$$

$$c_n: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 \rightarrow c_1 = 9n - 1$$

$$b_{9n-1} = 59 \Rightarrow 9n - 1 < 59 \Rightarrow n \leq 7 \rightarrow$$

$$\boxed{7}$$

$$a_1 + a_2 + a_3 + \dots + a_n = a_1 + a_2 + a_3 \Rightarrow a_1 + a_2 = 14$$

$$(7)$$

$$\therefore a_1 + 2d - a_1 = 14 \Rightarrow d = 7$$

$$\therefore 3a_1 + 3d = 14 \Rightarrow 3a_1 = 14 - 21 = -7$$

$$\therefore a_1 = -7/3$$

$$\therefore a_1 + 2d = a_1 - d + a_1 + d = 14 \Rightarrow \frac{a_1 + d}{a_1} = \frac{14}{-7/3} = -6$$

$$a_1 + a_2 + a_3 = 14 \Rightarrow 3a_1 + 3d = 14 \Rightarrow 10/d = 22/d \Rightarrow d = 5$$

$$a_1 + a_2 = 14 \Rightarrow 2a_1 + 2d = 14 \Rightarrow 10/d = 22/d \Rightarrow d = 5$$

$$\therefore 3a_1 + 6d = 14 \Rightarrow 3a_1 = 14 - 30 = -16 \Rightarrow a_1 = -16/3$$

$$t_n, (n-1)$$

$$t_{10} = 14$$

$$\frac{1}{x} (a_1 + nd) \text{ s } \frac{1}{x} (a_1 + nd) \quad (9)$$

$$a_1 + nd \text{ s } a_1 + nd$$

$$x(a_1 + nd) = x a_1$$

$$d \text{ s } a_1$$

$$d_a = \frac{2f}{4} = f, a_n = 1, 12, 19, 26, 33, 40 \quad (10)$$

$$b_1 \text{ s } 12$$

$$b_n \text{ s } 12$$

$$d_b = \frac{12 - 12}{n-1} = \frac{-12}{n-1}, b_f = 12 + \frac{-12}{n-1} = 12, 12 = \frac{12}{n-1}, n = 2$$

$$b_1 \text{ s } 12 \quad \boxed{12}$$

$$b_4 \text{ s } 12$$