

$$5 \quad 9 \quad 13 \quad 17$$

الف) f_{n+1}

ب) 41

$$6 \quad 10 \quad 14 \quad 18 \quad 22 \dots$$

الف) $\frac{n}{2}(2a_1 + (n-1)d) \rightarrow 2(12 + 24) = 240$

ب) $a_n = 4 + (n-1)4 = 11n$

$$6 \quad 22 \quad 38$$

$$\frac{1}{2}(11n + 130) = 499$$

$\downarrow$
 $11n + 2(49)$

$$1 + \sqrt{2} \quad 2 \quad 2 - \sqrt{2}$$

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

$$a_{24} - a_{23} = 2d$$

$$2(1 - \sqrt{2}) = 2 - 2\sqrt{2}$$

$$a_n = a^{2^x}, \quad \underbrace{a^{2^x} \times a^{2^x} \times \dots \times a^{2^x}}_{\substack{a^{2^x} + a^{2^x} + \dots + a^{2^x} \\ d}}, \quad \underbrace{a^{2^x} \times a^{2^x}}_{a^{2^x+1}} = a^y \rightarrow y = 2^x + 1$$

$$b_n = 2^x, 2^y, 2^z$$

$$2^x + 2^y = 2^z + 1$$

$$2^z + 1 - 2^x = 2^y = 2^x + 1$$

$$d = \frac{2^x}{2^y} + \frac{1}{2^y}$$

$$\frac{2^x}{2^y} + \frac{1}{2^y} = 2^x$$

$$y = 2^x + 1 = 3 \rightarrow 2^x = 2^y = 4$$

$$2^x - 4 < 2^x - 1 < 4^x$$

$$d = +3$$

$$2^x + 2^y = 4^x$$

$$2^y = 4^x$$

$$2^x = \frac{1}{2}$$

$$a_4 = 2^x + 2^y + d = 2^x + 2^y + 3 = 4$$

$$a_n = \frac{r \cdot \omega \cdot \epsilon \cdot V}{r}$$

$$b_n = \frac{r \cdot \omega \cdot \epsilon \cdot \Lambda}{r}$$

$$r \cdot [r \cdot r] = r$$

$$\omega \quad || \quad \nu$$

$$r + 19(r) = 41 \quad \text{جواب ۲۰}$$

$$\omega + 4n - 6 \leq 41$$

$$4n \leq 47$$

$$n \leq 11$$

در اینجا مشترک وجود دارد

$$a_1 + a_2 + a_3 = 21$$

$$a + a + d + a + 2d = 3(a + d) = 21$$

$$a + d = 7$$

$$a + a + 2d + a + 4d = 10a = 3a + 9d \Rightarrow 3(a + 3d) = 10a$$

$$a + 3d = 10a$$

$$-a + 3d = 9a$$

$$d = 10a$$

$$a = -10$$

$$a_2 - a_1 + a_1 = a + 3d - a - d + a = a + d = 7$$

$$\frac{7}{-10} = -\frac{1}{2}$$

$$\underbrace{a_1 + a_2 + a_3 + a_4 + a_5}_{10} = 100$$

$$a_1 + a_5 = a_2 + a_4 = a_3 + a_3$$

$$2a_3 = 100$$

$$a_3 = 50$$

$$a_{10} = a_3 + 7d$$

$$19 = 50 + 7d$$

$$a_2 - 2d \quad a_2 - d \quad a_2 \quad a_2 + d \quad a_2 + 2d$$

$$3(1) - 2d = 10$$

$$2d = 9$$

$$d = 4.5$$

$$S_9 = 1/2 (a_1 + a_9)$$

$$S_2 = 1/2 (a_1 + a_2)$$

$$1/2 a_1 + 1/2 a_9 = 1/2 a_1 + 1/2 a_2$$

$$1/2 a_9 = 1/2 a_1 + 1/2 a_2$$

$$a_9 = a_1 + a_2$$

$$a_1 + 8d = a_1 + a_1 + d$$

$$7d = a_1$$

$$d = a_1/7$$

$$\frac{a + 19d}{a + 9d} = \frac{19a_1}{12a_1} = \frac{19}{12}$$

$$a_7 = a + 6d$$

$$r_7 = 11 + 6d$$

$$d = 1$$

$$a_7 = 17$$

$$a_7' = a_7 + r_7$$

$$17 = 17 + r_7$$

$$-10 = r_7$$

$$d = -10$$

$$d = \frac{b - a}{n + 1}$$

$$-10 = \frac{17 - 17}{n + 1} \rightarrow -10n - 10 = -170$$

$$-10n = -160$$

$$10n = 160$$

$$n = 16$$