

$$t_n = 2 \frac{9}{+4} \frac{13}{+4} \frac{17}{+4} \rightarrow a_n = 4n + 1$$

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$$a_{10} = 4(10) + 1 = 41$$

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$$d = 4$$

$$S_{10} = \frac{10}{2} (2(4) + 9(4)) = 240 \rightarrow S_n = \frac{n}{2} (2a_1 + (n-1)d)$$

$$a_n = 4n + 2$$

$$S_n = \frac{n}{2} (a_1 + a_n) \rightarrow \frac{n}{2} (a_{29} + a_{30})$$

$$a_{29} = 4(29) + 2 = 118 \quad a_{30} = 4(30) + 2 = 122$$

$$S_{29} = \frac{29}{2} (118 + 122) = 844$$

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

$$a_n = 1 - \sqrt{3}(n) + 2\sqrt{3}$$

$$\frac{1 - \sqrt{3}}{d}$$

$$a_{29} = 29 - 29\sqrt{3} + 2\sqrt{3} = 29 - 27\sqrt{3}$$

$$a_{30} = 30 - 30\sqrt{3} + 2\sqrt{3} = 30 - 28\sqrt{3}$$

$$a_{30} - a_{29} = 2d \rightarrow 2(1 - \sqrt{3}) = 2 - 2\sqrt{3}$$

$$a_n = \frac{\omega^y + \omega^{2x}}{2} = 2 \times \omega^{2x} \rightarrow \omega^y + \omega^{2x} = 4 \times \omega^{2x} \rightarrow \omega^y = 4\omega^{2x} - \omega^{2x}$$

$$b_n = \frac{x+y}{2} \rightarrow x+y=2$$

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$$y = 2 - x$$

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$$y = 2x + 1$$

$$\omega^y = (\omega^x)^2 \rightarrow \omega^y = \omega^{2x+1}$$

$$2 - x = 2x + 1 \rightarrow 3x = 1 \rightarrow x = \frac{1}{3}$$

$$\frac{2n-1+4n}{2} = 2n-1 \rightarrow 2n-1 = 2n-1$$

$$2n = 2 \rightarrow n = \frac{1}{2}$$

$$\frac{2n-1}{-3} + \frac{2n-1}{0} + \frac{4n}{3} \rightarrow \frac{2n-1}{-3} + \frac{4n}{3} = d$$

$$a_n = 3n - 4$$

$$a_4 = 3(4) - 4 = 8$$

$$a_n = 2, 5, 8, \dots \rightarrow r_{n+1} \quad a, 11, 17, \dots$$

$$b_n = 2, 5, 8, \dots \rightarrow r_{n-1}$$

$4n-1$: مشترک

$$a_{n-1} \rightarrow r_0(2) + 1 \rightarrow 1 \quad b_n \rightarrow r_0(2) - 1 \rightarrow 1$$

$4n-1 \leq 41$
 $4n \leq 42 \rightarrow n \leq 10.5$

$$\left. \begin{aligned} a_1 + a_r + a_p &= 11 \rightarrow 2a_1 + 2d = 11 \\ a_1 + a_p + a_d &= 10 \rightarrow 2a_1 + 4d = 10 \end{aligned} \right\} \rightarrow 2d = 1 \rightarrow d = 0.5$$

$$\frac{a_p - a_r + a_1}{d} = \frac{11 - 10 + 2}{0.5} = 20$$

$$\left. \begin{aligned} a_1 + a_r + a_p &= 10 \rightarrow (2a_1 + 2d = 10) \\ a_f + a_d &= 20 \rightarrow (2a_1 + 4d = 20) \end{aligned} \right\} \rightarrow \left. \begin{aligned} 4a_1 + 4d &= 20 \\ 4a_1 + 2d &= 20 \end{aligned} \right\} \rightarrow 2d = 0 \rightarrow d = 0$$

$$a_{10} = 2(10) + 1 = 21$$

$$S_9 = 9S_p$$

$$\frac{9}{2}(a_1 + a_9) = 9 \times \left(\frac{p}{2}(a_1 + a_p) \right) \rightarrow a_1 + 4d = 2a_1 + 2pd$$

$$\frac{a_p}{av} = \frac{a_1 + 4d}{a_1 + 4d} \rightarrow \frac{2pa_1}{13a_1} = 2 \rightarrow p = 13$$

$$a_v - a_1 \rightarrow 4d = 2f \rightarrow d = f \rightarrow a_n = 2n + v$$

$$\frac{13 - r_n}{n+1} = d = -5$$

$$-5n - 5 = -20 \rightarrow -5n = -15 \rightarrow n = 3$$