

الف) $a_n = r(n-1) + 1 = r n + 1$ ✓

(۲)

ب) $a_1 = r \times 1 + 1 = r + 1$ ✓

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الف) $a_n = r n + 2 \rightarrow a_1 = 4$
 $\rightarrow a_{10} = 12$ $S_{10} = \frac{10}{2} (4 + 12) = 80$ ✓

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ب) $a_{10}, a_1, a_n, a_{100}$

$a_{10} = 118$ $S = \frac{r}{2} (100 + 118) = 499$ ✓
 $a_{100} = 120$

$d = r - (1 + \sqrt{r}) = 1 - \sqrt{r}$

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$a_{10} - a_{100} = a_1 + r d - (a_1 + 99 d) = r d$

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$r d = r(1 - \sqrt{r}) = r - r\sqrt{r}$ ✓

$b_n = x, r, y \Rightarrow r - x = y - r \Rightarrow y = r - x$

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$a_n = \omega^{rx}, r \times \omega^{rx}, \omega^{y} \rightarrow r-x$

$y = r - x = r \rightarrow xy = r \times 1 = r$ ✓

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$r \times \omega^{rx} - \omega^{rx} = \omega^{r-x} - r \times \omega^{rx}$
 $\omega \times \omega^{rx} = \omega^{r-x} \Rightarrow \omega^{rx+1} = \omega^{r-x} \Rightarrow rx+1 = r-x$ ✓
 $x = 1$

$d = r x - (r x - r) = r$

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$9x - (9x - 1) = r$

$r x + 1 = r$
 $x = \frac{1}{r}$ ✓

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$a_{10} = 9x = r \Rightarrow a_r = a_{10} + d = r + r = 2r$ ✓

$$a_n = r_{n+1} \quad a_{r_1} = r_1 r_1 + 1 = r_1 \rightarrow \text{مستطرد}$$

$$b_n = r_n - 1 \quad b_{r_1} = r_1 r_1 - 1 = r_1^2 - 1$$

$$a, 11, 14, \dots \leftarrow \text{مستطرد}$$

$$c_n = 4n - 1 \quad 4n - 1 \leq r_1 \quad 4n \leq r_1 + 1 \quad n \leq V \rightarrow \text{مستطرد} \checkmark$$

$$a_1 + (a_1 + d) + (a_1 + 2d) = r_1 a_1 + r_1 d = r_1 \Rightarrow a_1 + d = V = a_{r_1}$$

$$a_1 + (a_1 + d) + (a_1 + 2d) = r_1 a_1 + 4d = 1 \cdot a_1 \Rightarrow a_1 + 2d = r_1 d = a_{r_1}$$

$$a_1 = r_1 - a_{r_1} - a_{r_1} = r_1 - r_1 r_1 = -r_1$$

$$a_{r_1} - a_{r_1} + a_1 = r_1 d - V - r_1 = V \Rightarrow \frac{V}{a_1} = \frac{V}{-r_1} = -\frac{1}{r_1} \checkmark$$

$$a_{r_1} = \frac{1}{r_1} = d = a_1 + d$$

$$a_{r_1} + a_d = r_1 a_1 + V d = r_1 d$$

$$a_{r_1} = 4d + a_1 = r_1 V + r_1 = r_1 \checkmark$$

$$\begin{cases} a_1 + d = d \\ r_1 a_1 + V d = r_1 d \end{cases} \quad \begin{cases} r_1 a_1 + r_1 d = 1 \\ r_1 a_1 + V d = r_1 d \end{cases} \quad \begin{matrix} a_1 = r_1 \\ d = r_1 \end{matrix}$$

$$\frac{a_{r_1}}{r_1} (a_1 + a_{r_1}) = \frac{r_1}{r_1} (a_1 + a_{r_1}) \quad \left\{ \begin{array}{l} \frac{a_{r_1}}{a_1} = \frac{r_1 d + a_1}{4d + a_1} = 1 + \frac{r_1 d}{4d + a_1} = \frac{r_1 (r_1 a_1)}{4(r_1 a_1) + a_1} + 1 \\ \frac{r_1 a_1}{1 r_1 a_1} + 1 = r_1 \end{array} \right. \checkmark$$

$$r_1 a_1 + V d = 4a_1 + 4d \quad r_1 d = r_1 a_1 \Rightarrow d = r_1 a_1$$

$$a_V - a_1 = 4d = r_1 d - 11 = r_1 r_1 \Rightarrow d = r_1 \quad (a_{r_1} = r_1 d + a_1 = 11 + 11 = 22)$$

$$b_{r_1} = r_1 r_1 \quad b_{r_1} - b_1 = r_1 d = r_1 r_1 - r_1 = -11 = d = -11 \checkmark$$

$$b_1 = r_1 r_1 \quad d = \frac{r_1 - r_1 r_1}{n+1} \Rightarrow -11 = \frac{-r_1 d}{n+1} \Rightarrow -11(n+1) = -r_1 d \Rightarrow n = r_1 \checkmark$$