

$$a_n = aq^{n-1} = \frac{1}{r} \times r^9 = \boxed{r^8}$$

الف

$$\frac{q q^{14}}{d q^{14}} = q^k = r^k = \boxed{14}$$

(b)

$$a_k = \frac{1}{r} \times r^k = r^k$$

$$b^r = ac \rightarrow b^r = r \times r \times r \rightarrow b = \boxed{55}$$

$$q^4 = 4f \rightarrow q = 2$$

$$\frac{1}{r} \times r^{n-1} = 12 \rightarrow r^{n-1} = 48$$

$$n = \sqrt[4]{48} = 48^{1/4}$$

$$\frac{94}{12} = 1 \rightarrow 2 \rightarrow 9 = 2$$

$$\frac{1}{r_v}, \frac{1}{q}, \frac{1}{r}, 1, 1, -, -, 94$$

$$a_{17} = 9 \times r^{16} = \frac{1}{4^4} \times 4^4 \times r^7 = \boxed{4914}$$

$$\frac{a}{q^r} \times \frac{q}{q} \times a \times a \times a \times a \times a = a = 125 \rightarrow a = 5$$

$$\frac{1}{2} \times 18 = 9$$

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$$b^r = ac \rightarrow (r\sqrt{r})^r, r^r = r^{a+b}$$

$$r r = r^2 \rightarrow a + b = \frac{a}{r} \quad (5 \text{th})$$

$$b^r = ac \rightarrow n^r = (n+1)(1-n)$$

$$u^r = u - u^r + 1 - pu$$

$$u^T = -u^T + 1$$

$$P_{22}^2 = 1$$

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

$$x = \frac{1}{5}$$

4

$$\begin{aligned}
 a + aq^r &= 18 \rightarrow a(1 + q^r) = 18 \\
 + aq + aq^r &= 12 \rightarrow aq(1 + q) = 12 \\
 (3a - 1)(q - 3) &< \frac{1}{3} < \frac{1}{3} \\
 \frac{a}{q} \times a \times aq &= a^3 = 12 \rightarrow a = 3 \rightarrow \frac{3}{q} + 3 + 3q = 18 \rightarrow \frac{3 + 3q + 3q^2}{q} = 12
 \end{aligned}$$

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$$\begin{aligned}
 12q &= 3 + 3q + 3q^2 \rightarrow 10q = 3q^2 + 3 \rightarrow 3q^2 - 10q + 3 = 0 \rightarrow (q-1)(q-9) = 0 \\
 \downarrow \quad \downarrow \\
 \frac{1}{3} \quad 9
 \end{aligned}$$

$$S_n = a_1 \left(\frac{q^n - 1}{q - 1} \right) \rightarrow S_{10} = 3 \times \left(\frac{9^{10} - 1}{9 - 1} \right) = 89048$$

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$$\sqrt{2 \times 89048} = 2 \times 89048$$

ب

$$aq, aq^2, aq^3, aq^4$$

9

$$\begin{aligned}
 aq^2 - aq &= aq(q-1) \\
 aq^3 - aq^2 &= aq^2(q-1) \\
 aq^4 - aq^3 &= aq^3(q-1)
 \end{aligned}$$

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الف) $a + a + d + a + 2d + \dots + a + (n-1)d$

$$\underbrace{an + \frac{n(n-1)}{2}d}_{\text{مجموع } d \text{ لـ } a} = an + \frac{n^2d}{2} - \frac{d}{2} \rightarrow = \frac{n}{2}(2a + (n-1)d)$$

ب) $a \left[\frac{q^n - 1}{q - 1} \right]$

$$A(q-1)$$

$$a, aq, aq^2, aq^3, \dots, aq^{n-1} \rightarrow a + aq + aq^2 + \dots + aq^{n-1} \rightarrow Aq = aq + aq^2 + \dots + aq^n$$

$$\frac{Aq - A}{q - 1} = A \frac{q^n - 1}{q - 1} = A$$