

$$q_{10} = \frac{1}{2} \times 2^9 = 256 \checkmark$$

(۱) الف ۲۵۶

$$\frac{q_{14}}{q_{13}} = \frac{2^{14}}{2^{13}} = 2 \checkmark$$

(ب) ۱۶

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$$\left. \begin{array}{l} a_6 = 2^6 \\ a_{10} = 2^{10} \end{array} \right\} \Rightarrow b^2 = 2^{10} \Rightarrow b = 2^5 = 32 \checkmark$$

(۲) ۳۲

$$128 = \frac{1}{2} \times 2^{n-1} \Rightarrow n-1 = 8 \Rightarrow n = 9$$

(د) هشتین

$$\frac{a_1}{a_0} = 2 \Rightarrow \frac{94}{12} = 8 \Rightarrow r = 2 \Rightarrow a_{10} = 94 \times 2^8 = 384 \checkmark$$

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(۲) ۳۸۴

$$\begin{array}{l} a_3 \times a_2 = a_5 \Rightarrow 2^3 \times 2^2 = 2^5 \Rightarrow a_5 = 2^5 \checkmark \\ a_1 \times a_4 = a_5 \Rightarrow 2^1 \times 2^4 = 2^5 \checkmark \end{array}$$

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(۳) الف ۳

(ب) ۹

$$32 = 2^{a+b} \Rightarrow a+b = 5 \Rightarrow \frac{a+b}{2} = 2.5 \checkmark$$

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(۵) فقط حالت $\oplus$ قابل قبول است زیرا به ازای $x = -\frac{\sqrt{2}}{2}$ $x^2 = 1 - 2x^2 \Rightarrow 2x^2 - 1 = 0$ $x = \pm \frac{\sqrt{2}}{2}$ $\checkmark$ $\frac{x^2 + \frac{\sqrt{2}}{2}}{2}$ $\checkmark$ $\frac{x^2 - \frac{\sqrt{2}}{2}}{2}$ $\checkmark$

جواب فرد با هم غیر علامت می شوند

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$$\frac{a(1+a^3)}{1+a^3} = \frac{3}{2} \Rightarrow \sqrt{r} = 3 - 3r + 3r^2 \Rightarrow r = \frac{1}{3}$$

(۶) ۲۷

$$a(1+27) = 28 \Rightarrow a = 1, 1, 3, 9, 27 \checkmark$$

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$$a(1+\frac{1}{r^3}) = 28 \Rightarrow a = 27, 9, 3, 1$$

Year..... Month..... Date.....

$a, \mu, \sigma, \tau, \nu$

5) a, s, p

9. 19 (✓)

$$\frac{q^n}{q} = q + q^2 + q^3 + \dots + q^{n-1} + q^n$$

$$r, \psi(1+q+q^r) = 1 \text{ or } q$$

$$\therefore 1 + q + q^2 = \frac{1-r}{r} q$$

$$10^p = \frac{10^q + 1}{p}$$

$$\frac{10 + \frac{1}{2}}{2} \rightarrow \frac{19}{2} \rightarrow \frac{9}{19} + \frac{2v}{19} + \frac{2v}{19} \times$$

$$\frac{1}{2} \rightarrow \underbrace{9 + 2 + 1} \checkmark$$

$$\frac{\mu(\mu^1 - 1)}{\mu^1 - 1}$$

$$(2 \times 2 \times 3^9)^d, 2^{10} \times 3^d$$

✓ (الف) $1 - \mu$

✓ 1024 x 2¹⁶ (—)

$$a, aq, aq^2, aq^3, \dots$$

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$$a, aq, aq^2, aq^3, \dots, a(q-1), aq(q-1), aq^2(q-1), \dots$$

$$aq - a, aq' - aq, \dots \rightarrow \underbrace{a(q-1)}_{(1) \times q}, \underbrace{aq(q-1)}_{(2) \times q}, \underbrace{aq'(q-1)}_{(3) \times q}$$

$$S_n = a_1 + (a_1 + d) + (a_1 + 2d) + \dots + (a_1 + (n-1)d)$$

$$S_n = [a + (n-1)d] + [a + (n-2)d] + \dots + a$$

$$\therefore S_n = [a + a + (n-1)d] + [a + d + a + (n-1)d] + \dots$$

تعداد ابراز: $n \geq 1$ $\sum_{i=1}^n a_{i+(n-1)d}$

$$\therefore S_n = n[Ya + (n-1)d] \quad \text{or} \quad S_n = \frac{n}{2} (Ya + (n-1)d)$$



Subject:

Year: Month: Date:

$$S_n = a + aq + aq^2 + \dots + aq^{n-1} \quad (1)$$

$$qS_n = q(a + aq + aq^2 + \dots + aq^{n-1}) = (aq + aq^2 + \dots + aq^n)$$

$$S_n(q-1) = aq^n - a \quad \therefore S_n = \frac{a(q^n - 1)}{q - 1}$$