

$$b^2 \cdot ac \rightarrow a_r \times a_{10} = a_n \times a_n \rightarrow r_n = 14 \rightarrow n = 7$$

$$a_v = a q^4 = \frac{1}{r} \times r^4 = r^3$$

(سوال 1 ج)

$$a_1 + a_7 = 28$$

$$a_1 = 1 - a_7 = 28 - a_7 = 9 - a_7 = 28 \checkmark$$

$$a_7 + a_7 = 18 \rightarrow$$

$$a_7 = 28 \checkmark$$

$$a_1 + a_7 + a_7 = 18 \rightarrow$$

$$a_1 + a_1 q + a_1 q^2 \rightarrow a_1 (1 + q + q^2) = 18$$

$$a_1 \times a_7 \times a_7 = 28 \rightarrow$$

$$a_1 \times a_1 q \times a_1 q^2 \rightarrow a_1^3 \times q^3 = 28$$

$$\begin{matrix} 1 & r & q \\ a_1 & a_7 & a_7 \end{matrix}$$

$$q = 2, q = \frac{1}{2}$$

$$[9, 2, 1]$$

$$r, q, 1, \dots$$

$$q = 2$$

(الف)

$$s_{10} = \frac{a_1 (q^{10} - 1)}{q - 1} = \frac{1 \times (2^{10} - 1)}{2 - 1} = 2^{10} - 1 = 1023$$

$$P_n = (\sqrt{a_1 \cdot a_n})^n \rightarrow (\sqrt{1 \times 1023})^{10} = (\sqrt{1023})^{10} \checkmark$$

$$1, 2, 4, 8, 16, \dots$$

$$q = 2 \checkmark$$

سوال

$$-1, -2, -4, -8, \dots$$

$$a_1, a_1 q, a_1 q^2 \rightarrow a_1 - a_1 q, a_1 q - a_1 q^2$$

$$a_1 (1 - q), a_1 q (1 - q) \checkmark$$

$$a, a + d, a + 2d, a + 3d, \dots \quad s_n = a + (a + d) + (a + 2d) + \dots + (a + (n-1)d)$$

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

$$2s_n = (a + (n-1)d) + (a + d) + (a + 2d) + \dots + (a + (n-1)d) \quad 2s = (2a + (n-1)d)n$$

$$s = \frac{(2a + (n-1)d)n}{2} \checkmark$$

$$s_n = a + aq + aq^2 + \dots + aq^{n-1} \Rightarrow \phi_n = aq + aq^2 + aq^3 + \dots + aq^n$$

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

$$aq^n - a = s(q - 1)$$

$$s_n = \frac{a(1 - q^n)}{1 - q} = \frac{a(q^n - 1)}{q - 1} \checkmark$$