

الف) $a_n = a_1 \times q^{n-1} = \frac{1}{2} (2)^{n-1} \Rightarrow a_{10} = \frac{1}{2} \times 2^9 = \boxed{256}$ ب) $\frac{a_{10}}{a_1} = \frac{256}{\frac{1}{2}} = 2^9 = 2^9 = \boxed{16}$ ج) $\sqrt{a_1 \times a_{10}} = a_5 \Rightarrow \frac{1}{2} (2)^5 = \boxed{16}$ د) $a_n = \frac{1}{2} \times 2^n = \boxed{128} \rightarrow 2^7 = 2^9 \rightarrow \boxed{n=9}$	۱
$\frac{a_1}{a_5} = q^4 = \frac{96}{12} = 8 \Rightarrow \boxed{2}$ $q=2$ $a_{10} = a_1 \times q^9 = 96 \times 8 = \boxed{768}$	۲
الف) $(a_3)^5 = 243$ $a_3 = \boxed{3}$ ب) $a_1 \times a_5 = (a_3)^2 \Rightarrow 2^2 = \boxed{4}$	۳
$(\sqrt[5]{2})^2 = 2^{\frac{2}{5}} \times 2^{\frac{3}{5}}$ $\hookrightarrow r = 2^{\frac{2}{5}}$ $r^{a+b} = r^5$ $a+b=5$ $\frac{a+b}{r} = \frac{5}{2} = \boxed{2.5}$	۴
الف) $n^r = (1-u)(n+1)$ $u^r = 1 - n^r$ $2n^r = 1$ $n^r = \frac{1}{2}$ $\sqrt{n^r} = \pm \sqrt{\frac{1}{2}} = \pm \frac{\sqrt{2}}{2}$ ب) $\frac{a_v}{a_w} = \frac{a_{11}}{a_1} = \frac{2^{\frac{11}{2}}}{2^{\frac{1}{2}}} = \frac{2^{\frac{10}{2}}}{1} = 2^5 = 32$ ج) $\frac{a_{11}}{a_1} = \frac{2^{\frac{11}{2}}}{2^{\frac{1}{2}}} = 2^5 = 32$ د) $\frac{a_{11}}{a_1} = \frac{2^{\frac{11}{2}}}{2^{\frac{1}{2}}} = 2^5 = 32$ ه) $\frac{a_{11}}{a_1} = \frac{2^{\frac{11}{2}}}{2^{\frac{1}{2}}} = 2^5 = 32$	۵

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