

14, 5

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(1, 5) (اف)

$$a_n = \frac{1}{r} \times r^{n-1} \Rightarrow a_{10} = \frac{1}{r} \times r^9 = r^8 = 256 \checkmark$$

$$\frac{\frac{1}{r} \times r^{10}}{\frac{1}{r} \times r^8} = \frac{r^{10}}{r^8} = r^2 = 16 \checkmark$$

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

$$a_7 = a q^6 = \frac{1}{r} \times r^6 = 32$$

$$q^r = \frac{a_{10}}{a_r} = \frac{256}{32} = 8 \Rightarrow q = \pm 2 \Rightarrow 32 \times (\pm 2) = 64 \text{ or } 16$$

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

$$\begin{cases} a_1 q^8 = 96 \\ a_1 q^6 = 12 \end{cases} \Rightarrow q^2 = 8 \Rightarrow q = \pm 2 \Rightarrow a_1 \times r^8 = 12 \Rightarrow a_1 = \frac{12}{r^8} = \frac{r}{r^8} \Rightarrow a_{10} = \frac{r}{r^8} \times r^9 = 12 \checkmark$$

$$a_1(a_1 q) \dots (a_1 q^8) = a_1^9 q^{36} = 2^8 \times 3^3 \Rightarrow a_1^9 = 2^8 \times 3^3 \Rightarrow a_1 = 2 \checkmark$$

$$a_1(a_1 q^8) = a_1^2 q^8 = (a_1 q^4)(a_1 q^4) = 9 \checkmark$$

$$\frac{r^b}{r^a} = \frac{r^b}{r^a} \Rightarrow r^b = r^{a+b} \Rightarrow a+b=0 \Rightarrow b = -a \checkmark$$

$$\frac{a_v}{a_r} = q^r = \frac{x}{1-x}, \frac{a_{11}}{a_v} = q^r = \frac{x+1}{x} \Rightarrow \frac{x}{1-x} = \frac{x+1}{x} \Rightarrow x^2 = 1-x^2 \Rightarrow x^2 = \frac{1}{2} \Rightarrow x = \pm \frac{1}{\sqrt{2}}$$

$$\frac{a_7}{q} \times a \times a q^5 = 12 \Rightarrow a^r = 12 \Rightarrow a_r = 12$$

$$\frac{12}{q} + 12 + 12q = 12 \Rightarrow q = 1 \text{ or } q = -1$$

$$1, 3, 9 \leq 9, 3, 1$$

$$r \left(\frac{r^{10}-1}{r-1} \right) = r^{10}-1 = 0 \Rightarrow r = 1 \checkmark$$

$$\sqrt[10]{(r \times (r^9))^{10}} = \sqrt[10]{r^{10} \times r^{90}} = \sqrt[10]{r^{100}} = r^{10} = 10^6$$

$$(a, q-a), (a, q^2-a, q), \dots \checkmark$$

$$\frac{a_1 q^r - a_1 q}{a_1 q - a_1} = \frac{q^r - 1}{q - 1} = 9 \checkmark$$

