

2.75  
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$$\begin{cases} a = \frac{a_1(q^n-1)}{q-1} \\ b = \frac{a_1(q^{2n}-1)}{q-1} \end{cases} \rightarrow \frac{a}{b} = \frac{\frac{a_1(q^n-1)}{q-1}}{\frac{a_1(q^{2n}-1)}{q-1}} = \frac{1}{q^{n+1}} \rightarrow \boxed{q^n = \frac{b}{a} - 1}$$

$$a = \frac{a_1(q^n-1)}{q-1} \rightarrow \frac{a}{q^{n-1}} = \frac{a_1}{q-1} \rightarrow S = \frac{a_1}{1-q} = \frac{a}{1-q^n} = \frac{a}{1-\frac{b}{a}+1} =$$

$$\boxed{S = \frac{a}{2-\frac{b}{a}} = \frac{a}{\frac{2a-b}{a}} = \frac{a^2}{2a-b}}$$