

$$a_1 = 1, \quad a_{n+1} - a_n = \frac{(-1)^n}{3^n} \quad \text{--- ①}$$

Consider

$$\sum \frac{(-1)^n}{3^n (a_{n+1} \cdot a_n)} = \sum \frac{(a_{n+1} - a_n)}{a_{n+1} \cdot a_n} \quad [\text{from ①}]$$

$$= \sum \left(\frac{1}{a_n} - \frac{1}{a_{n+1}} \right)$$

$$= \left(\frac{1}{a_1} - \cancel{\frac{1}{a_2}} \right) + \left(\cancel{\frac{1}{a_2}} - \cancel{\frac{1}{a_3}} \right) + \left(\cancel{\frac{1}{a_3}} - \cancel{\frac{1}{a_4}} \right) + \dots - \left(\cancel{\frac{1}{a_n}} - \frac{1}{a_{n+1}} \right)$$

$$= \frac{1}{a_1} - \frac{1}{a_{n+1}} \Rightarrow \boxed{1 - \frac{1}{a_{n+1}}}$$