

Tech startups

A tech startup in the Suzhou Industrial Park is experiencing exponential growth. In its first year, the startup made a profit of \$10,000. Due to its innovative products and strategic market positioning, the company's profit is doubling every year.



- What will be the startup's profit in the 5th year?
- If this trend continues, how much total profit will the startup have made by the end of the 7th year?
- In which year will the startup's annual profit exceed \$1 million for the first time?

Kunqu opera tickets

A cultural center in Suzhou is planning to host a series of Kunqu opera performances. They anticipate that the popularity of these performances will grow exponentially due to increased interest in traditional arts. For the first performance, they sell 100 tickets. Expecting a surge in demand, they predict that the number of tickets sold for each subsequent performance will increase by a factor of 1.5.



- How many tickets will be sold for the 4th performance?
- If the cultural center continues to host these performances and the trend persists, how many total tickets will be sold for the first 6 performances combined?
- For which performance will the number of tickets sold exceed 1000 for the first time?