

Idea 58: The rule of 72

Compound interest

It is easy to compare compound interest rates by calculating how long it takes for a quantity to double at different interest rates. The rule of 72 is a quick way to compare growth rates. It has been used since the 15th Century.

$$R \times T = 72$$

R is the percentage growth rate

T is the time taken to double the principal amount

Question: You borrow £100. If you pay nothing back, how long will it take for the debt to double?

Discuss which lender offers which loan and complete the table.

Annual interest rate (%)	Calculation of doubling time $T = \frac{72}{R}$	Years taken for debt to double	Lender
6	$\frac{72}{6} = 12$	12	High street bank loan
24	$\frac{72}{24} = 3$	3	Credit card debt
1,200	$\frac{72}{1200} = 0.06$	0.06 years \approx 21 days	Payday loan

Population growth

Use the Rule of 72 to work out how long it will take for a population to double.

There are 5,000 people on an island

The population grows at 2%. How long will it take to double?

The population grows at 3%. How long will it take to double?

What are the implications for the water resources on the island?

Sao Vicente, Cape Verde Islands has no natural water supply and limited rainfall. Research the ways in which the Cape Verdians have solved the problem.