

How to ... *Compound Interest is not the same amount every year... the amount at the start of each year changes*

* Viv wants to invest £2000 for 2 years in the same bank.

The International Bank

Compound Interest

4% for the first year

1% for each extra year

The Friendly Bank

Compound Interest

5% for the first year

0.5% for each extra year

At the end of two years, Viv wants to have as much money as possible.

Which bank should she invest her £2000 in?

The International Bank

$$\begin{aligned} 1\% \text{ of } 2000 &= £20 \\ 4\% &= £80 \end{aligned}$$

$$\begin{aligned} \text{Year 1} &= 2000 + 80 \\ &= 2080 \end{aligned}$$

$$1\% \text{ of } 2080 = 20.80$$

$$\begin{aligned} \text{Year 2} &= 2080 + 20.80 \\ &= 2100.80 \end{aligned}$$

Viv should invest her money with the Friendly Bank - she will earn £170 more.

The Friendly Bank

$$5\% \text{ of } 2000 = £100$$

$$\begin{aligned} \text{Year 1} &= 2000 + 100 \\ &= 2100 \end{aligned}$$

$$0.5\% \text{ of } 2100 = £10.50$$

$$\begin{aligned} \text{Year 2} &= 2100 + 10.50 \\ &= 2110.50 \end{aligned} \quad (4)$$

Now have a go yourself ...

(1) £4000 is invested for 2 years at 5% per annum compound interest. Work out the total interest over the 2 years.

(2) £700 is invested for 3 years at 2.5% per annum compound interest. Work out the total interest over the 3 years.

(3) £3600 is invested for 3 years at 2.6% per annum compound interest. Work out the amount of interest earned over the 3 years.

(4) £300 is invested for 2 years at 9% per annum compound interest. Work out the balance at the end of 2 years.

(5) A car is bought new for £8000. The value of the car depreciates by 10% each year. Work out the value of the car after 3 years.

(6) Mrs Jones buys a house for £80,000. In the first year the value of the house increases by 16%. In the second year, the value of the house decreases by 4%. Work out the value of the house after 2 years.

(7) Mr Jones deposits £3000 in a bank account. Compound interest is paid at a rate of 4%. Mr Jones wants to leave the money in the account until there is at least £4000. How many years must he leave the money in the bank account?

Exam Questions

(1) Aminah invested £2500 for n years in a savings account. She was paid 3% per annum compound interest.

At the end of n years, Aminah has £2813.77 in the savings account.

Work out the value of n .

(2)

(2) Tom invested £4500 for 2 years in a savings account. He was paid 4% per annum compound interest.

How much did Tom have in his savings account after 2 years?

(2)

Ready to be marked ?

Checklist



Answers checked

Working shown

Keywords



Things to remember ...



What went well ...



Teacher comment ..