

- 1** Katy invests £200 000 in a savings account for 4 years.  
The account pays compound interest at a rate of 1.5% per annum.

Calculate the total amount of interest Katy will get at the end of 4 years.

£.....

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**(Total for Question 1 is 3 marks)**

**2** Ella invests £7000 for 2 years in an account paying compound interest.

In the first year, the rate of interest is 3%

In the second year, the rate of interest is 1.5%

Work out the value of Ella's investment at the end of 2 years.

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**(Total for Question 2 is 3 marks)**

- 3 Northern Bank has two types of account.  
Both accounts pay compound interest.

**Cash savings account**  
Interest  
2.5% per annum

**Shares account**  
Interest  
3.5% per annum

Ali invests £2000 in the cash savings account.  
Ben invests £1600 in the shares account.

- (a) Work out who will get the most interest by the end of 3 years.  
You must show all your working.

(4)

In the 3rd year the rate of interest for the shares account is changed to 4% per annum.

- (b) Does this affect who will get the most interest by the end of 3 years?  
Give a reason for your answer.

(1)

(Total for Question 3 is 5 marks)

- 4 Anil wants to invest £25 000 for 3 years in a bank.

**Personal Bank**

Compound Interest

2% for each year

**Secure Bank**

Compound Interest

4.3% for the first year  
0.9% for each extra year

Which bank will give Anil the most interest at the end of 3 years?  
You must show all your working.

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(Total for Question 4 is 3 marks)

**5** Tariq buys a laptop.

He gets a discount of 5% off the normal price.

Tariq pays £551 for the laptop.

(a) Work out the normal price of the laptop.

£ .....

(2)

Joan invests £6000 in a savings account.

The savings account pays compound interest at a rate of

2.4% for the first year

1.7% for each extra year.

(b) Work out the value of Joan's investment at the end of 3 years.

£ .....

(3)

**(Total for Question 5 is 5 marks)**

**6** In 2003, Jerry bought a house.

In 2007, Jerry sold the house to Mia.  
He made a profit of 20%

In 2012, Mia sold the house for £162 000  
She made a loss of 10%

Work out how much Jerry paid for the house in 2003

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**(Total for Question 6 is 3 marks)**

- 7 Louise invests £ $x$  in Better Investments for 3 years.  
Sadiq invests £ $x$  in County Bank for 3 years.

**Better Investments**

Compound Interest

2.5% per annum

**County Bank**

Compound Interest

2% per annum for the first two years  
3.5% per annum for each extra year

At the end of the 3 years, the value of Louise's investment is £344 605

Work out the value of Sadiq's investment at the end of the 3 years.

£.....

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(Total for Question 7 is 4 marks)

- 8** Marie invests £8000 in an account for one year.  
At the end of the year, interest is added to her account.

Marie pays tax on this interest at a rate of 20%  
She pays £28.80 tax.

Work out the percentage interest rate for the account.

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**(Total for Question 8 is 3 marks)**



**9** Jean invests £12 000 in an account paying compound interest for 2 years.

In the first year the rate of interest is  $x\%$

At the end of the first year the value of Jean's investment is £12 336

In the second year the rate of interest is  $\frac{x}{2}\%$

What is the value of Jean's investment at the end of 2 years?

£.....

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**(Total for Question 9 is 4 marks)**

- 10** Naoby invests £6000 for 5 years.  
The investment gets compound interest of  $x\%$  per annum.  
At the end of 5 years the investment is worth £8029.35  
Work out the value of  $x$ .

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(Total for Question 10 is 3 marks)

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**11** Jack bought a new boat for £12 500

The value, £ $V$ , of Jack's boat at the end of  $n$  years is given by the formula

$$V = 12\,500 \times (0.85)^n$$

- (a) At the end of how many years was the value of Jack's boat first less than 50% of the value of the boat when it was new?

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(2)

A savings account pays interest at a rate of  $R\%$  per year.

Jack invests £5500 in the account for one year.

At the end of the year, Jack pays tax on the interest at a rate of 40%.

After paying tax, he gets £79.20

- (b) Work out the value of  $R$ .

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(3)

(Total for Question 11 is 5 marks)

**12** Sakira invested £3550 in a savings account for 3 years.

She was paid 2.6% per annum compound interest for each of the first 2 years.  
She was paid  $R\%$  interest for the third year.

Sakira had £3819.21 in her savings account at the end of the 3 years.

Work out the value of  $R$ .

Give your answer correct to 1 decimal place.

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**(Total for Question 12 is 3 marks)**