Percentages - Calculator

1.

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.

2.

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.

£.....

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.

The circumference of circle **B** is 90% of the circumference of circle **A**.

(a) Find the ratio of the area of circle **A** to the area of circle **B**.

.....

(2)

Square **E** has sides of length e cm.
Square **F** has sides of length f cm.

The area of square **E** is 44% greater than the area of square **F**.

(b) Work out the ratio $e : f$

4.

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.

5.

Last year Jo paid £245 for her car insurance.
This year she has to pay £883 for her car insurance.

Work out the percentage increase in the cost of her car insurance.

6.

Emily buys a pack of 12 bottles of water.
The pack costs £5.64

Emily sells all 12 bottles for 50p each.

Work out Emily's percentage profit.
Give your answer correct to 1 decimal place.

.....%

7.

At the beginning of 2009, Mr Veale bought a company.
The value of the company was £50 000

Each year the value of the company increased by 2%.

(a) Calculate the value of the company at the beginning of 2017
Give your answer correct to the nearest £100

£.....

(2)

At the beginning of 2009 the value of a different company was £250 000
In 6 years the value of this company increased to £325 000

This is equivalent to an increase of x% each year.

(b) Find the value of x.
Give your answer correct to 2 significant figures.

8.

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?

.....

(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.