

## N144 Repeated percentage change 1

**Q1.**

Franz invests £2500 into a business for 2 years at  $3\frac{1}{2}\%$  per annum compound interest.  
Work out the value of his investment at the end of 2 years.

£ .....

**(Total for question = 3 marks)**

**Q2.**

The value of a motor bike depreciates by 20% each year.

Brian says,

"After two years, the value of the motor bike will have reduced by 40%".

He is **wrong**.

Explain why.

**(Total for question = 3 marks)**

**Q3.**

Helen invested £6000 for  $n$  years into a business.  
She got 3% compound interest each year.

At the end of  $n$  years Helen's investment is worth £7379.24.

Work out the value of  $n$ .

You must show your working.

.....  
**(Total for question = 2 marks)**

**Q4.**

The value of a car depreciates by 25% each year.

At the end of 2013 the value of the car was £4800

Work out the value of the car at the end of 2015

£.....

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

**Q5.**

Martin bought a computer for £1200

At the end of each year the value of the computer is depreciated by 20%.

After how many years will the value of the computer be £491.52?

You must show your working.

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

**Q6.**

Neil invested £500 into a business on 1st January 2000 at a fixed compound interest rate of  $R\%$  each year. The value  $V$ , in pounds, of this investment after  $n$  years is given by the formula

$$V = 500 \times (1.025)^n$$

(a) Write down the value of  $R$ .

.....  
(1)

(b) Use your calculator to find the value of Neil's investment at the end of 12 years.

.....  
(2)

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