$$100\% + 4\% = 104\%.$$

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

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

   $$4500 \times 1.04^2$$

   £ .....4867.20.....

   (Total 3 marks)

2. The value of a car depreciates by 35% each year.

   At the end of 2007 the value of the car was £5460 $100\% - 35\% = 65\%.$

   Work out the value of the car at the end of 2006

   $$5460 \div 0.65 = 8400$$

   £ .....8400.....

   (Total 3 marks)

3. Mario invests £2000 for 3 years at 5% per annum **compound** interest.

Calculate the value of the investment at the end of 3 years.

$$2000 \times 1.05^3$$

£ 2315.25

(Total 3 marks)

4. Derek invests £154 500 for 2 years at 4% per year compound interest.

Work out the value of the investment at the end of 2 years.

$$154500 \times 1.04^2$$

£ 167107.20

(3)

(Total 3 marks)

5. Henry invests £4500 at a compound interest rate of 5% per annum.

At the end of n complete years the investment has grown to £5469.78.

Find the value of n.

$$4500 \times 1.05^3 = 5209.31$$

$$4500 \times 1.05^4 = 5469.78$$

............4............

(Total 2 marks)

6. A company bought a van that had a value of £12 000
Each year the value of the van depreciates by 25%.

Work out the value of the van at the end of three years.

$$12000 \times 0.75^3 = 5062.50$$

£ 5062.50

(3)

(Total 3 marks)

7. Bill invests £500 on 1st January 2004 at a compound interest rate of $R\%$ per annum.
   The value, £V, of this investment after n years is given by the formula

   $$V = 500 \times (1.045)^n$$

   (a) Write down the value of R.

   $R = $ ......4.5......

   (1)

   (b) Use your calculator to find the value of Bill's investment after 20 years.

   $$500 \times 1.045^{20}$$

   $$= 1205.86$$

   £ ...1205.86...

   (2)
   (Total 3 marks)

8. Gwen bought a new car.
Each year, the value of her car depreciated by 9%.

Calculate the number of years after which the value of her car was 47% of its value when new.

~~1.09~~

$0.91^3 = 0.753571$

$0.91^4 = 0.68574961$

$0.91^5 = 0.6240321451$

$0.91^6 = 0.567869252$

$0.91^7 = 0.516761019y$

$0.91^8 = 0.47025$

.............................**8**.............................

(Total 3 marks)

9. Liam invests £6200 for 3 years in a savings account.
He gets 2.5% per annum compound interest.

How much money will Liam have in his savings account at the end of 3 years?

6200×1.025^3

$= 6676.72$

£.............**6676.72**.............

(Total 3 marks)

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

(a)   How much did Toby have in his savings account after 2 years?

£ ....4867.20...........
(3)

Jaspir invested £2400 for *n* years in a savings account.
He was paid 7.5% per annum compound interest.

At the end of the *n* years he had £3445.51 in the savings account.

(b)   Work out the value of *n*.

$$2400 \times 1.075^4 = 3205.13$$
$$2400 \times 1.075^5 = 3445.51$$

.............5.............
(2)

(Total 5 marks)

*11 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 2 years, Viv wants to have as much money as possible.

Which bank should she invest her £2000 in?

$2000 \times 1.04 \times 1.01$ $2000 \times 1.05 \times 1.005$

$= £2100.80$ $= £2110.5$

Viv should invest her money in The Friendly Bank.

(Total 4 marks)