Suppose £10000 is invested at 10% per annum for 4 years. How much does it amount to?

	10000
	1000
yr 1	11000
	1100
yr 2	12100
	1210
yr 3	13310
	1331
yr 4	14641

£14641

$$\text{Amount} = \text{Principal}\left(1 + \frac{\text{rate}}{100}\right)^n$$

$$A = P\left(1 + \frac{r}{100}\right)^n$$

In this example $A = 10000 \times 1.10^4$

Ex 2 £4500 is invested for 6 years at 7% per annum. What does it amount to

$$A = 4500 \times 1.07^6$$

$$= £6753.29$$

Depreciation on a reducing balance basis

A car costing £30000 new, depreciating at 20% per annum. Find its value after 4 years

	30000
	6000 –
	24000
Yr 1	4800 –
	19200
Yr 2	3840 –
	15360
Yr 3	3072 –
	12288
Yr 4	

At end of Year 4

Value = £12,288

Value = Original $\times \left(1 - \frac{r}{100}\right)^n$

Value = 30000×0.8^4

= £12288

COMPOUND INTEREST / DEPRECIATION — EXERCISE

Use both non-calculator and calculator methods for questions 1 and 2

1. Find the amount in the bank when £6000 is invested at 5% per annum for 2 years

2. Find the amount in the bank when £20000 is invested at 10% per annum for 3 years

3. Find the amount when £750 is invested for 4 years at 8% per annum

4. Find the amount when £15000 is invested for 9 years at 3% per annum

Use both non-calculator and calculator methods for questions 5 and 6

5. Find the value of a 2 year old car that cost £7000 new and depreciates at 20% per annum

6. Find the value of a 3 year old car that cost £10,000 new and depreciates at 10% per annum.

7. Find the value of a 5 year old machine that cost £65000 new and depreciates at 25% per annum.

8. Find the value of a 7 year old machine that cost £35000 new and depreciates at 32% per annum