GCSE FOUNDATION · REVISION MAT 3

Growth, decay and compound interest

1 £1,200 is invested at 4% **simple** interest per year.

Work out the total interest after 3 years.

2 £1,500 is invested at 10% **compound** interest per year.

Work out the value after 3 years.

3 Dan says,

"10% compound interest for 2 years is the same as 20% simple interest."

Explain why Dan is wrong.

4 A van costs £2,000.

Its value falls by 50% each year.

Show that it is worth £250.00 after 3 years.

5 Joe has £2,000 to invest for 3 years.

Account A: 5% simple interest per year

Account B: 4.8% compound interest per year

Which account gives more interest? Show your working.

6 The population of a village is 1,800.

It grows by 10% each year.

After how many years will the population first be more than 2,500?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Growth, decay and compound interest

1 Interest per year = £48

3 × £48 = **£144**

2 £1,500 × 1.1^3

= **£1,996.50**

3 Each year's interest is added on, so the next year's interest is worked out on a bigger amount.

1.1^2 = 1.21, a **21%** increase, not 20%

4 £2,000 × 0.5^3 = **£250.00** ✓

5 A: £2,000 × 0.05 × 3 = £300.00

B: £2,000 × 1.048^3 − £2,000 = £302.05

Account B gives more.

6 × 1.1 each year: 1,980, 2,178, 2,396, 2,635

4 years