GCSE FOUNDATION · REVISION MAT 2

Growth, decay and compound interest

1 £800 is invested at 2% **simple** interest per year.

Work out the total interest after 5 years.

2 £4,000 is invested at 3% **compound** interest per year.

Work out the value after 2 years.

3 Cat says,

"20% compound interest for 2 years is the same as 40% simple interest."

Explain why Cat is wrong.

4 A van costs £10,000.

Its value falls by 10% each year.

Show that it is worth £7,290 after 3 years.

5 Joe has £5,000 to invest for 4 years.

Account A: 3% simple interest per year

Account B: 2.9% compound interest per year

Which account gives more interest? Show your working.

6 The population of a village is 5,000.

It grows by 8% each year.

After how many years will the population first be more than 7,000?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

Growth, decay and compound interest

1 Interest per year = £16

5 × £16 = **£80**

2 £4,000 × 1.03^2

= **£4,243.60**

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

1.2^2 = 1.44, a **44%** increase, not 40%

4 £10,000 × 0.9^3 = **£7,290** ✓

5 A: £5,000 × 0.03 × 4 = £600.00

B: £5,000 × 1.029^4 – £5,000 = £605.72

Account B gives more.

6 × 1.08 each year: 5,400, 5,832, 6,299, 6,802, 7,347

5 years