GCSE FOUNDATION · REVISION MAT 4

Growth, decay and compound interest

1 £650 is invested at 5% **simple** interest per year.

Work out the total interest after 4 years.

2 £6,000 is invested at 2% **compound** interest per year.

Work out the value after 3 years.

3 Eve says,

"5% compound interest for 2 years is the same as 10% simple interest."

Explain why Eve is wrong.

4 A van costs £8,000.

Its value falls by 25% each year.

Show that it is worth £4,500 after 2 years.

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

Account A: 2.5% simple interest per year

Account B: 2.4% compound interest per year

Which account gives more interest? Show your working.

6 The population of a village is 12,000.

It grows by 5% each year.

After how many years will the population first be more than 15,000?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Growth, decay and compound interest

1 Interest per year = £32.50

4 × £32.50 = **£130**

2 £6,000 × 1.02^3

= **£6,367.25**

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

1.05^2 = 1.1025, a **10.25%** increase, not 10%

4 £8,000 × 0.75^2 = **£4,500** ✓

5 A: £4,000 × 0.025 × 5 = £500.00

B: £4,000 × 1.024^5 − £4,000 = £503.60

Account B gives more.

6 × 1.05 each year: 12,600, 13,230, 13,892, 14,586, 15,315

5 years