GCSE FOUNDATION · REVISION MAT 1

Growth, decay and compound interest

1 £500 is invested at 3% **simple** interest per year.

Work out the total interest after 4 years.

2 £2,000 is invested at 5% **compound** interest per year.

Work out the value after 2 years.

3 Ben says,

"10% compound interest for 3 years is the same as 30% simple interest."

Explain why Ben is wrong.

4 A van costs £5,000.

Its value falls by 20% each year.

Show that it is worth £2,560 after 3 years.

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

Account A: 4% simple interest per year

Account B: 3.8% compound interest per year

Which account gives more interest? Show your working.

6 The population of a village is 2,400.

It grows by 6% each year.

After how many years will the population first be more than 3,000?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Growth, decay and compound interest

1 Interest per year = £15

4 × £15 = **£60**

2 £2,000 × 1.05^2

= **£2,205**

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

1.1^3 = 1.331, a **33.1%** increase, not 30%

4 £5,000 × 0.8^3 = **£2,560** ✓

5 A: £3,000 × 0.04 × 3 = £360.00

B: £3,000 × 1.038^3 – £3,000 = £355.16

Account A gives more.

6 × 1.06 each year: 2,544, 2,697, 2,858, 3,030

4 years