

compound interest

AND DEPRECIATION

EXAMPLE

Tim puts £6000 into an account which pays compound interest of 2.4% per annum. How much is in the account after 3 years?

$$\text{year 1} \rightarrow \frac{2.4}{100} \times 6000 = £144 \rightarrow 6000 + 144 = £6144$$

$$\text{year 2} \rightarrow \frac{2.4}{100} \times 6144 = 147.456 \rightarrow 6144 + 147.456 = £6291.456$$

$$\text{year 3} \rightarrow \frac{2.4}{100} \times 6291.456 = 150.994944 \rightarrow 6291.456 + 150.994944 = £6442.45$$

$$100\% + 2.4\% = 102.4\%$$

$$\frac{102.4\%}{100} = 1.024 \quad \text{multiplier}$$

number of years

$$6000 \times 1.024^3 = 6442.45$$

QUESTION

Sally puts £9000 into an account which pays compound interest of 2.1% per annum. How much is in the account after 5 years?

$$100\% + 2.1\% = 102.1\%$$

$$\frac{102.1\%}{100} = 1.021$$

$$9000 \times 1.021^5 = £9985.53$$

QUESTION

Toni puts £12000 into an account which pays compound interest of 1.8% per annum. How much interest has she earned after 9 years?

$$100\% + 1.8\% = 101.8\%$$

$$\frac{101.8\%}{100} = 1.018$$

$$12000 \times 1.018^9 = 14090.000827$$

$$14090.000827 - 12000 = £2090.01$$