

1

The value of a house is £120 000

The value is expected to increase by 5% each year.

Work out the expected value after 4 years.

Give your answer to 2 significant figures.

You **must** show your working.

[4 marks]

$$120\,000 \times 1.05 = 126\,000 \quad (1)$$

$$126\,000 \times 1.05 = 132\,300$$

$$132\,300 \times 1.05 = 138\,915 \quad (1)$$

$$138\,915 \times 1.05 = 145\,860.75 \quad (1)$$

$$\approx 150\,000$$

Answer £ 150 000 (1)

- 2 £2448 is invested in an account at a rate of compound interest.
One year after the investment there is £2496.96 in the account.

How much is in the account four years after the investment?

[3 marks]

$$\frac{2496.96 - 2448}{2448} = \frac{48.96}{2448} = 0.02 = 2\%$$

$$2448 \times 1.02^4 = 2649.79$$

Answer £ 2649.79

- 3 Magana decides to put £500 into an account that pays compound interest. She wants to have **at least** £560 in the account after 3 years. Work out to 1 decimal place the **minimum** annual interest rate she needs.

[3 marks]

$$500x^3 = 560$$

$$x^3 = \frac{560}{500}$$

$$x^3 = 1.12 \quad (1)$$

$$x = 1.0385 \quad (1)$$

$$= 3.85\%$$

$$= 3.9\% \text{ (1 d.p.)}$$

(1)

Answer 3.9 %