Exercise 2

Paper 2 style · Graphic display calculator

2 4 marks SL 1.4 ●○○ Routine

A motorbike is bought for 12 000 euros. Its value decreases by 18 % each year.

(a) Find the value of the motorbike after 4 years, to the nearest euro. **[2]**

(b) Find the number of complete years after which the value of the motorbike is first less than 4000 euros. **[2]**

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
© 2026 Hence

Exercise 2 — markscheme

Paper 2 style · Graphic display calculator

2 4 marks SL 1.4 ●○○ Routine

A motorbike is bought for 12 000 euros. Its value decreases by 18 % each year.

(a) Find the value of the motorbike after 4 years, to the nearest euro. [2]

(b) Find the number of complete years after which the value of the motorbike is first less than 4000 euros. [2]

MARKSCHEME (a)

$12\,000 \times 0.82^4$ (M1)

5425 euros $(5425.46\ldots)$ A1

Total 2 marks

MARKSCHEME (b)

$12\,000 \times 0.82^n < 4000,\ n > 5.54$ (M1)

6 years A1

Total 2 marks

Note Or after 5 years 4449, after 6 years 3648.