Exercise 3

Paper 2 style · Graphic display calculator

3 5 marks SL 1.4 ●●○ Typical

Clara wants 6000 euros to become 7500 euros in 5 years, in an account with interest compounded monthly.

(a) Find the nominal annual interest rate she needs, to two decimal places. **[3]**

(b) Inflation is expected to be 2.5 % per year. Find the real value, in today's money, of 7500 euros in 5 years, to the nearest euro. **[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.
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MARKSCHEME (a)

$6000\left(1+\frac{r}{1200}\right)^{60}=7500$ **M1**

$r=4.471\ldots$ **(A1)**

$4.47\,\%$ **A1**

Total 3 marks

Note Or the finance solver: $N=60$, $PV=-6000$, $FV=7500$, $P/Y=C/Y=12$.

MARKSCHEME (b)

$\frac{7500}{1.025^5}$ **(M1)**

6629 euros $(6628.91\ldots)$ **A1**

Total 2 marks