

# Chapter 5 Financial Maths

## Section 5.4 Loans – Mortgages

### PROJECT MATHS Text & Tests 6

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$$\therefore \text{€ Payment} = \frac{\text{€ Mortgage } (i)(1+i)^n}{(1+i)^n - 1}$$

#### Example 1

Calculate the size of the monthly repayments needed for a car loan of €10 000 if the loan is to be repaid over a 5-year term at an effective monthly rate of 0.72%.

Amortisation

Repayment

$$A = \frac{P(i)(1+i)^t}{(1+i)^t - 1}$$

Loan

$$5 \text{ years} = 60 \text{ months} \Rightarrow t = 60$$

$$\text{MER} = i = 0.72\% = 0.0072$$

$$P = 10\,000$$

$$A = \frac{10000(0.0072)(1.0072)^{60}}{(1.0072)^{60} - 1}$$

$$= \text{€ } 206$$