

Q11) i) €600 for 2 years at 5%

$$F = 600(1 + 5\%)^2 = F = €661.50$$

ii) €1800 for 2 year at 9%

$$F = 1800(1 + 9\%)^2 = 2138.58$$

iii) €3500 for 3 years at 7½%

$$F = (3500)(1 + 7.5\%)^3 = 4348.04$$

iv) €7800 for 3 yr at 3½%

$$F = (7800)(1 + 3.5\%)^3 = 8647.99$$

Q16

7% interest

F = 6848 sum invested.

$$\begin{array}{rcl} 100\% & + & 7\% & = & 107\% \\ \text{sum} & & \text{interest} & & \\ ? & & & & = 6848 \end{array}$$

$$107\% = 6848$$

$$1\% = \frac{6848}{107} = 64$$

$$100\% = 64 \times 100 = 6400$$

## Find the interest rate

Eg €2500 was invested in a Bank. It amounted to €2612.50 after 1 year. Find the rate of interest

Find interest earned on the start amount.

Final amount - Start amount = Interest earned

$$2612.50 - 2500 = €112.50$$

to find rate %

$$\frac{\text{Interest}}{\text{Start amount}} \times 100$$

$$\frac{112.50}{2500} \times 100 = 4.5\%$$

# Harder Question

£2800 was invested for 3 years and amount to £3149.62. What was the rate of interest.

$P = 2800$  start amount

$F = 3149.62$  final amount

$t = 3$  years

$i = ?$

Formula  $F = P(1+i)^t$

$$3149.62 = (2800)(1+i)^3$$

$$\frac{3149.62}{2800} = (1+i)^3$$

$$\sqrt[3]{\frac{3149.62}{2800}} = 1+i$$

$$\sqrt[3]{\frac{3149.62}{2800}} - 1 = i$$

$$0.04 = i \times 100$$

4%

# Depreciation

Formula

$$F = P(1 - i)^t$$

Log tables.

$$F = \underbrace{(15,000)(1 - 15\%)}_{\text{calculator}}^2$$

$$F = \text{€}10,837.5$$

The final amount will be less than the principal

Machine depreciates by 15% per year

If the machine is worth €15,000, find the value after 2 years.