



GRADE 12

Financial Maths

QUESTIONS- SIMPLE AND
COMPOUND INTEREST

QUESTIONS TO TRY ON YOUR OWN

1. Mary borrowed a certain sum of money from a bank at a compound interest rate of 15% calculated quarterly. After 3 years she now owes R7 000. How much did she borrow?
2. R1 570 is invested at 12% p.a. compound interest. After how many years will the investment be worth R23 000?
3. R2 000 was invested in a fund paying interest compounded monthly. After 18 months the value of the fund was R2 860, 00. Calculate the interest rate.

ANSWERS

1. $A = R\ 7000$

$$i = \frac{0,15}{4} \checkmark$$

$$n = 3 \times 4$$

$$P = ?$$

$$7000 = P \left(1 + \frac{0,15}{4} \right)^{3 \times 4} \checkmark$$

$$7000 = P(1,555454331) \dots\dots\dots \text{Divide both sides by } 1,555454331$$

$$P = R\ 4500,29 \checkmark \quad (3)$$

2. $A = P (1 + i)^n$

$$23\ 000 = 1\ 570(1 + 0,12)^n \checkmark \checkmark$$

$$\frac{23000}{1570} = (1,12)^n$$

$$14,6496\dots = (1,12)^n$$

$$n = \log_{1,12} 14,6496\dots \checkmark$$

$$n = 23,69 \text{ years}$$

substitute for A , P and i

simplify and divide

keep the number on your calculator without rounding

use log laws

Use the log keys on your calculator.

$$n \approx 24 \text{ years to the nearest year } \checkmark \quad (4)$$

3. $A = 2860$

$$P = 2000$$

$$i = ?$$

$$n = 18$$

$$A = P (1 + i)^n$$

$$2000 \left(1 + \frac{i}{12} \right)^{18} = 2860 \checkmark$$

$$\left(1 + \frac{i}{12} \right)^{18} = \frac{2860}{2000} \checkmark$$

$$1 + \frac{i}{12} = \sqrt[18]{1,43}$$

$$\frac{i}{12} = 0,020069541$$

$$i = 0,020069541\dots \checkmark$$

$$i = 0,2408344924 \times 100$$

$$i = 24,08\% \checkmark$$

(4)