FINANCE 2: QUIZ SOLUTIONS

Question 1

What is the future value of R500 invested at the end of each month for five years at a rate of 5% compounded monthly?

A. R27 628,20 B. R33 000,00 C. R34 003,04 D. R176 791,86

Solution

$$F = x\left(\frac{(1+i)^n - 1}{i}\right), \quad x = 500, \quad n = 5 \times 12 \quad , i = \frac{0{,}05}{12}$$

$$\therefore F = 500\left(\frac{(1+\frac{0{,}05}{12})^{60} - 1}{\frac{0{,}05}{12}}\right)$$

$$= \text{R}34\,003{,}04$$

So, the correct answer is C.

Question 2

What is the future value of an annuity if R700 is deposited immediately and then R700 per month for four years at 10% compounded monthly?

A. R41 105,74 B. R41 805,74 C. R42 148,49 D. R44 465,74

Solution

$$F = x\left(\frac{(1+i)^n - 1}{i}\right), \quad x = 700, \quad n = 4 \times 12 + 1 \quad , i = \frac{0{,}10}{12}$$

$$\therefore F = 700\left(\frac{(1+\frac{0{,}10}{12})^{49} - 1}{\frac{0{,}10}{12}}\right)$$

$$= \text{R}42\,148{,}29$$

So, the correct answer is C.

Question 3

What is the future value of an annuity if R3 000 is deposited every three months for three years at 4% pa compounded quarterly?

A. R9 364,80 B. R38 047,51 C. R129 230,64 D. R232 794,94

Solution

$$F = x\left(\frac{(1+i)^n - 1}{i}\right), \quad x = 3\,000, \quad n = 3 \times 4 \quad , i = \frac{0{,}04}{4}$$

$$\therefore F = 3\,000\left(\frac{(1+0{,}01)^{12} - 1}{0{,}01}\right)$$

$$= \text{R}38\,047{,}51$$

So, the correct answer is B.

Question 4

Every week Caroline deposits R30 into a savings account that earns interest at 6,9% pa compounded weekly. What will be the balance in Caroline's account after two years?

A. R133,04 B. R6 206,60 C. R16 141,30 D. R33 438,37

Solution

$$F = x\left(\frac{(1+i)^n - 1}{i}\right), \quad x = 30, \quad n = 2 \times 52 \quad , i = \frac{0{,}0692}{52}$$

$$\therefore F = 30\left(\frac{(1+\frac{0{,}0692}{52})^{104} - 1}{\frac{0{,}0692}{52}}\right)$$

$$= \text{ R33 438,37}$$

So, the correct answer is D.

Question 5

What is the future value of an annuity if R800 is deposited every month for 20 years into an account that earns 12,5% pa compounded monthly?

A. R17 686,82 B. 19 903,30 C. R61 088,60 D. R846 794,88

Solution

$$F = x\left(\frac{(1+i)^n - 1}{i}\right), \quad x = 800, \quad n = 20 \times 12, \quad i = \frac{0{,}125}{12}$$

$$\therefore F = 800\left(\frac{(1+\frac{0{,}125}{12})^{240} - 1}{\frac{0{,}125}{12}}\right)$$

$$= \text{R846 794,88}$$

So, the correct answer is D.