

**Recursion and financial modelling****Question 17**

$$P_{n+1} = 5P_n - 24, P_0 = 5$$

The terms  $P_1$ ,  $P_2$  and  $P_3$  in the above recursive relationship are

- A. 5, 1, -19
- B. 5, 25, 125
- C. 1, -19, -119
- D. 1, 5, 25
- E. 5, 1, 19

**Question 18**

Gina borrows \$230 000 to purchase a block of land. She repays the loan monthly, at a rate of 5% per annum, to repay the debt after 10 years.

Gina's monthly repayment is closest to

- A. \$1917
- B. \$2438
- C. \$2440
- D. \$4329
- E. \$4879

**Question 19**

An item costing \$ $M$  depreciates at an average of 2.3% per annum.

After 4 years, the value of the article can be calculated using

- A.  $M_4 = M_0 \times 1.023^4$
- B.  $M_5 = M_1 \times 1.23^4$
- C.  $M_4 = M_0 \times 0.77^4$
- D.  $M_4 = M_0 - 4 \times 0.977$
- E.  $M_4 = M_0 \times 0.977^4$