

**Question 34** (4 marks)

Tina inherits \$60 000 and invests it in an account earning interest at a rate of 0.5% per month. Each month, immediately after the interest has been paid, Tina withdraws \$800.

The amount in the account immediately after the  $n$ th withdrawal can be determined using the recurrence relation

$$A_n = A_{n-1}(1.005) - 800,$$

where  $n = 1, 2, 3, \dots$  and  $A_0 = 60\,000$ .

- (a) Use the recurrence relation to find the amount of money in the account immediately after the third withdrawal.

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**Question 34 continues on page 37**

Question 34 (continued)

- (b) Calculate the amount of interest earned in the first three months.

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**End of Question 34**

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