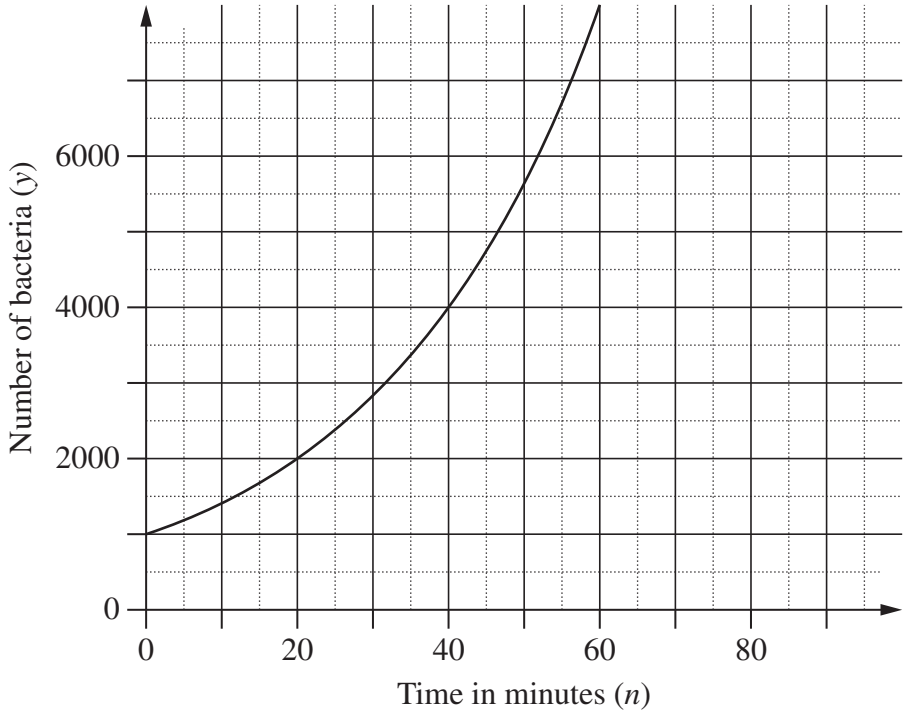
Question 33 (3 marks)

The graph shows the number of bacteria, y, at time n minutes. Initially (when $n = 0$) the number of bacteria is 1000.



(a) Find the number of bacteria at 40 minutes. **1**

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Question 33 continues on page 35

Question 33 (continued)

(b) The number of bacteria can be modelled by the equation $y = A \times b^n$, where A and b are constants. **2**

Use the guess and check method to find, to two decimal places, an upper and lower estimate for the value of b. The upper and lower estimates must differ by 0.01.

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End of Question 33

Please turn over