Question 3 **(25 marks)**
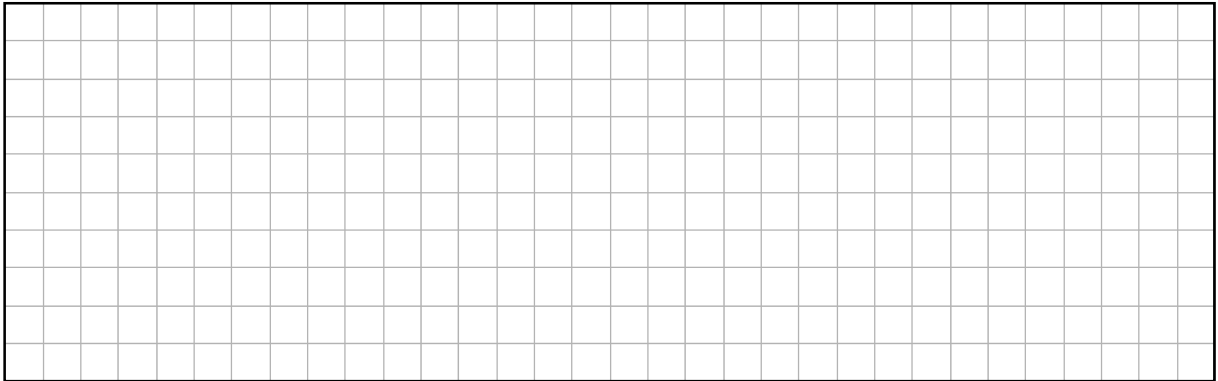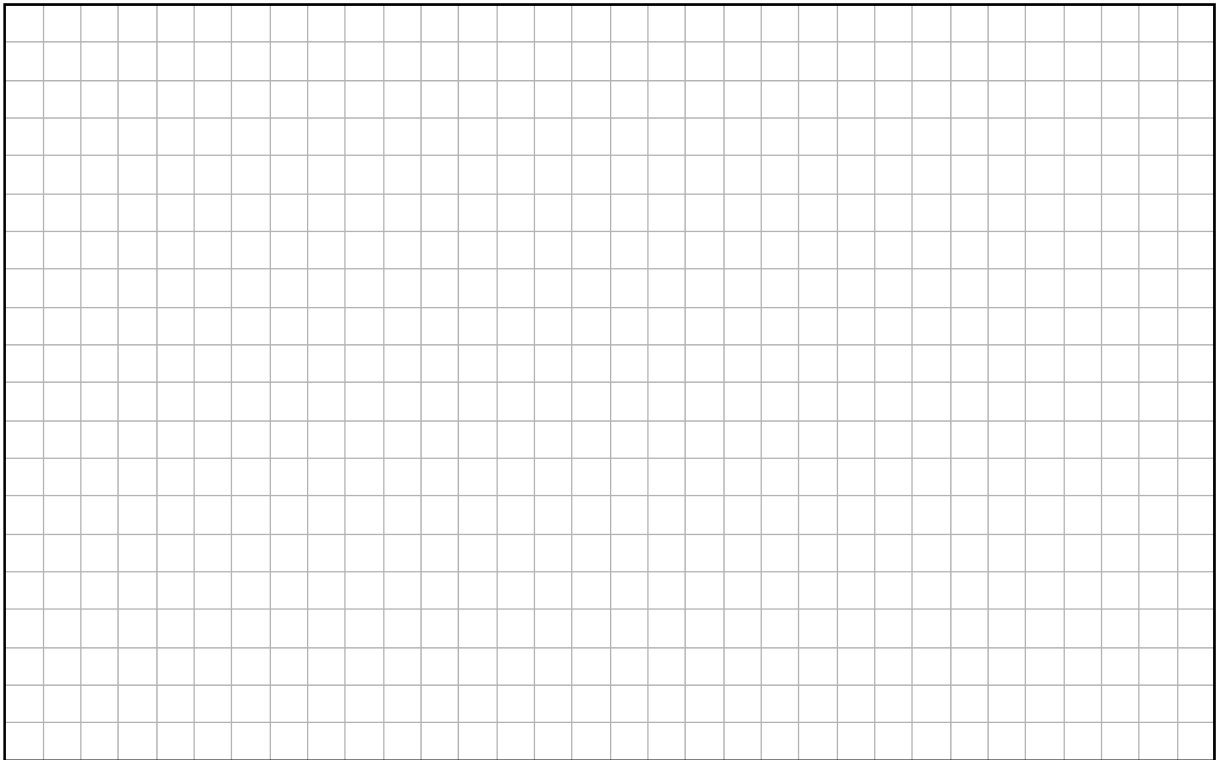
(a) Factorise fully: $3xy - 9x + 4y - 12$.

(b) $g(x) = 3x\ln x - 9x + 4\ln x - 12$.

Using your answer to **part (a)** or otherwise, solve $g(x) = 0$.

(c) Evaluate $g'(e)$ correct to 2 decimal places.