**8** (a) Complete the table of values for $y = 2 + \ln(2x + 1)$ giving your answers to 2 decimal places.

**(2)**

| $x$ | 0 | 0.25 | 0.5 | 1 | 1.5 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| $y$ | 2 | | | 3.10 | 3.39 | 3.61 | |

(b) On the grid opposite, draw the graph of $y = 2 + \ln(2x + 1)$ for $0 \leqslant x \leqslant 3$

**(2)**

(c) By drawing an appropriate straight line on the grid, obtain an estimate, to one decimal place, of the root of the equation $\ln(2x + 1) = 3x - 4$ in the interval $0 \leqslant x \leqslant 3$

**(3)**

(d) By drawing an appropriate straight line on the grid, obtain an estimate, to one decimal place, of the root of the equation $e^{(6-x)} - (2x + 1)^2 = 0$ in the interval $0 \leqslant x \leqslant 3$

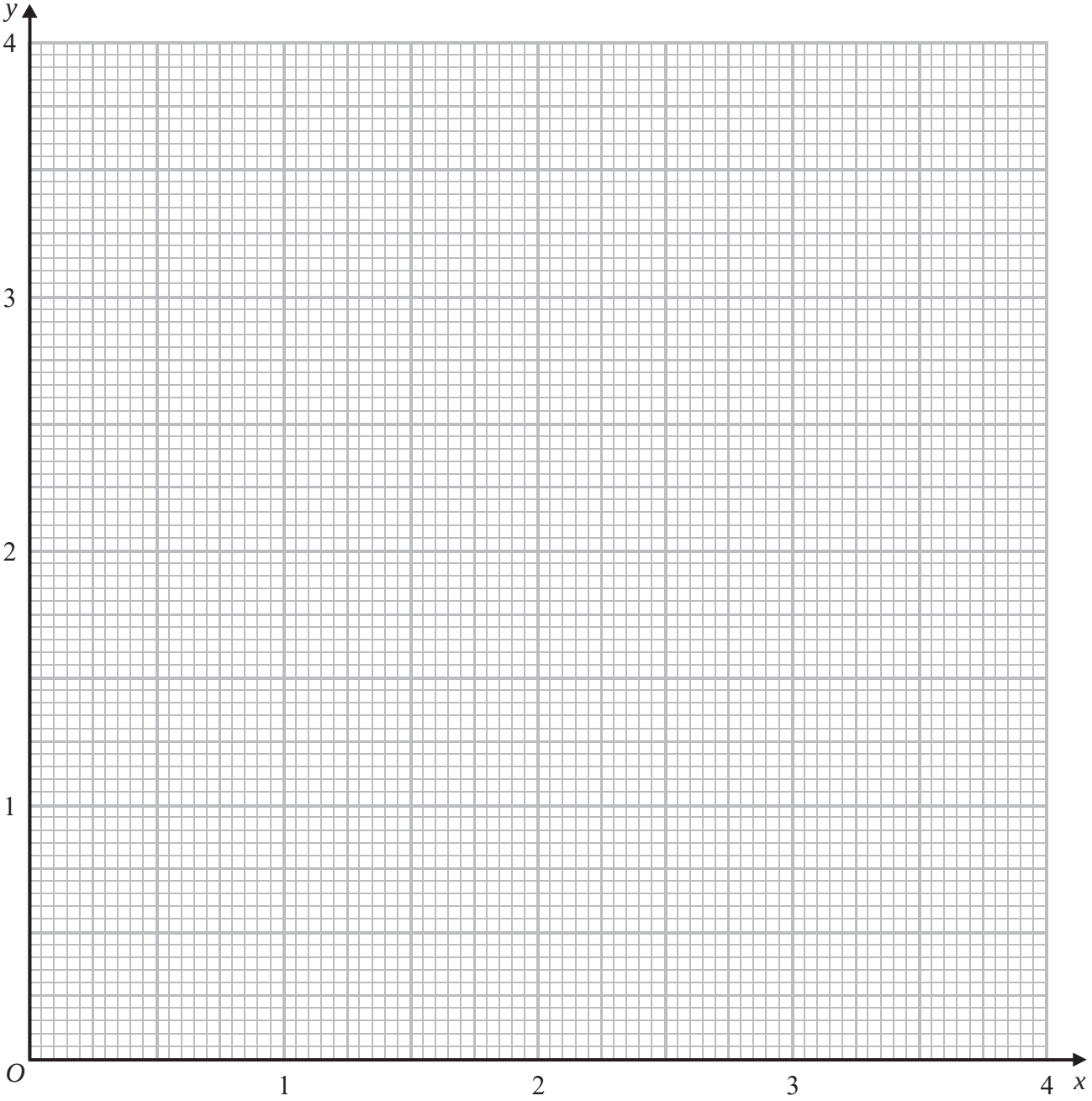
**(4)**

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

**Question 8 continued**

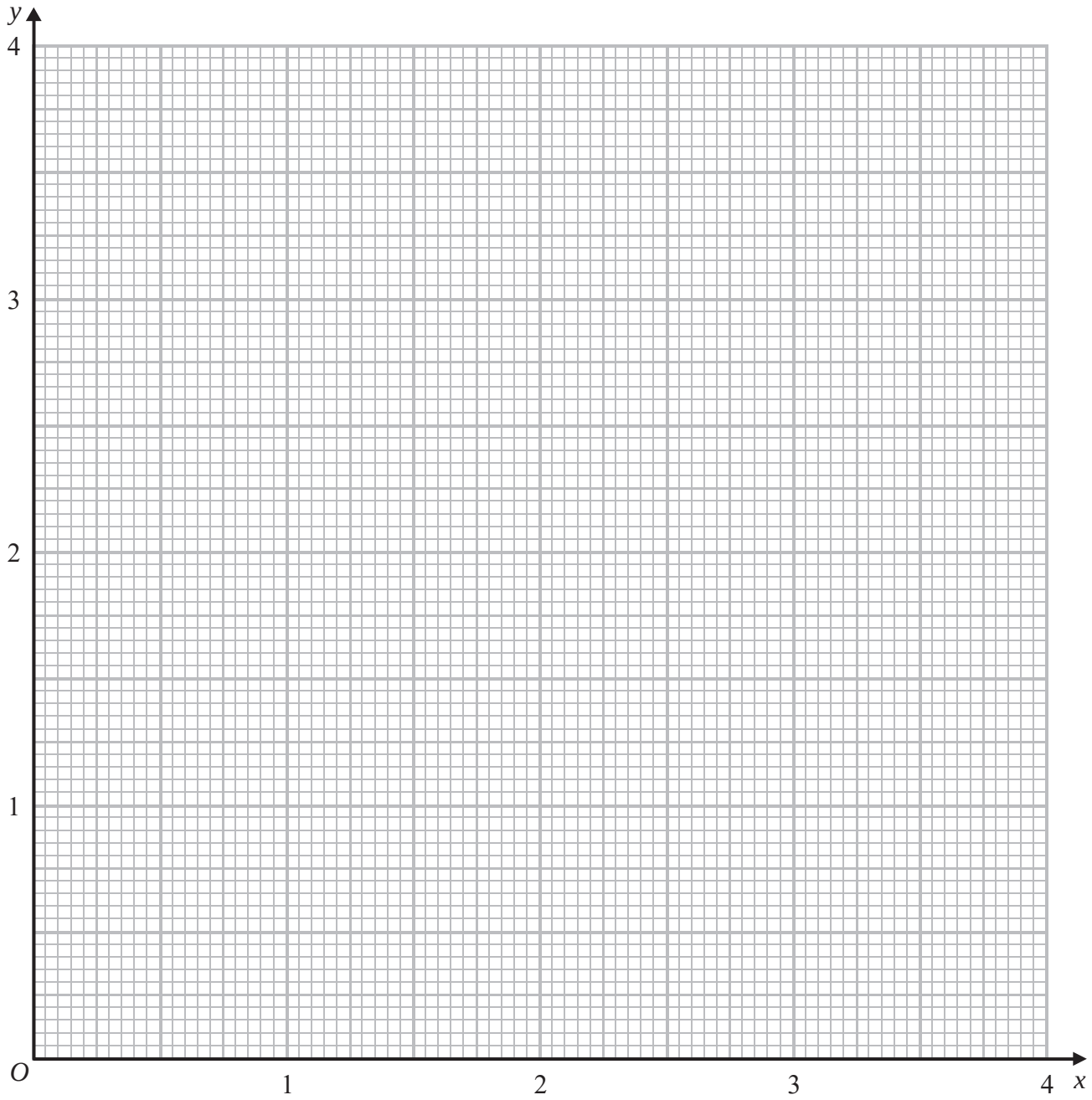



**Turn over for a spare grid if you need to redraw your graph.**

**Question 8 continued**

**Question 8 continued**

**Only use this grid if you need to redraw your graph.**




**(Total for Question 8 is 11 marks)**