7 (a) Complete the table of values for $y = 5\log_{10}(x + 2) - x$, giving your answers to 2 decimal places.

x	–1	0	1	2	3	4	5
y	1	1.51	1.39				–0.77

(2)

(b) On the grid opposite, draw the graph of $y = 5\log_{10}(x + 2) - x$ for $-1 \leqslant x \leqslant 5$

(2)

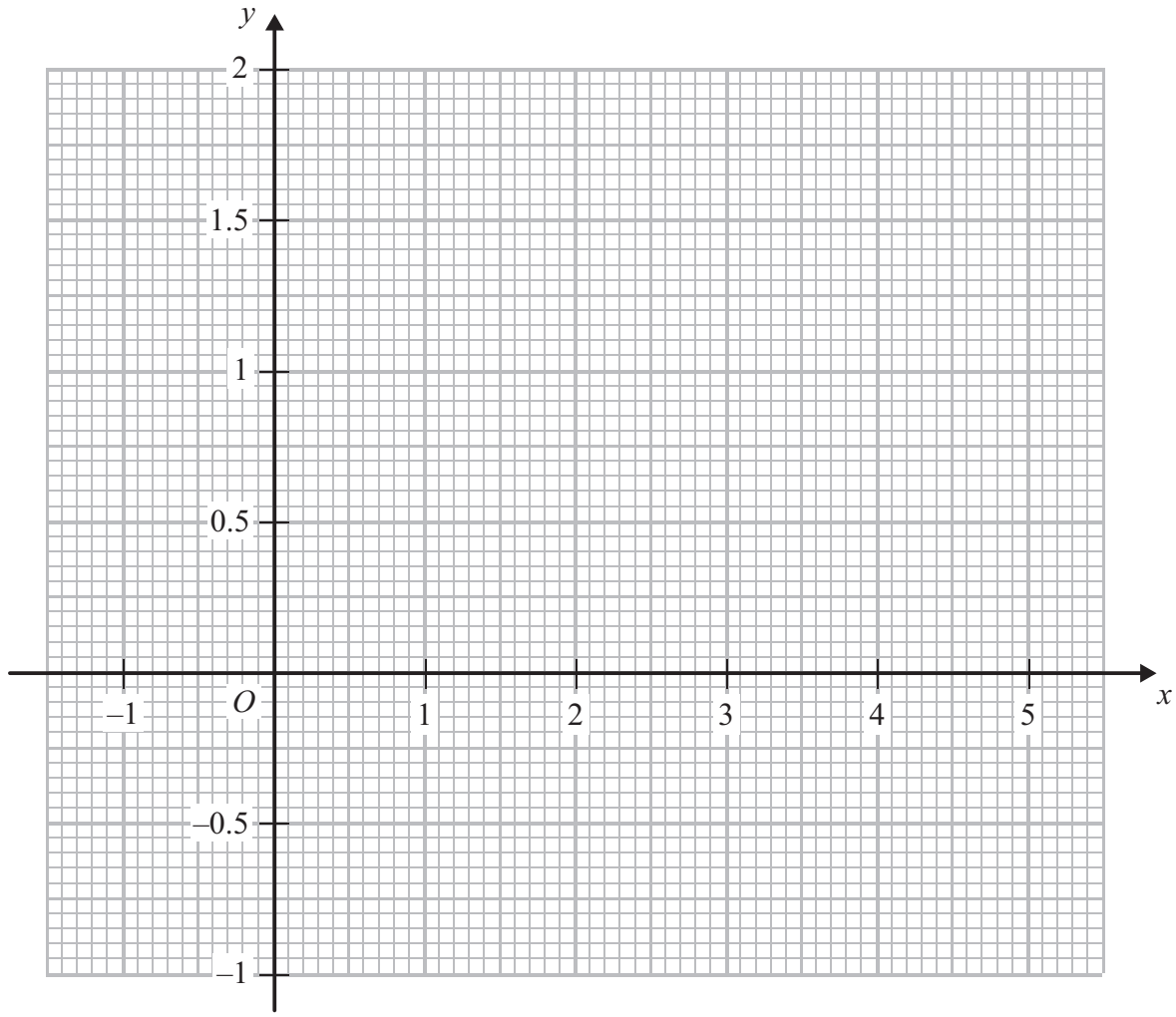
(c) Use your graph to obtain an estimate, to 1 decimal place, of the root of the equation $10\log_{10}(x + 2) - 2x = 1\frac{1}{2}$ in the interval $-1 \leqslant x \leqslant 5$

(2)

(d) By drawing an appropriate straight line on your graph, obtain an estimate, to 1 decimal place, of the root of the equation $x = 10^{\frac{1}{2}x} - 2$ in the interval $-1 \leqslant x \leqslant 5$

(4)

Question 7 continued

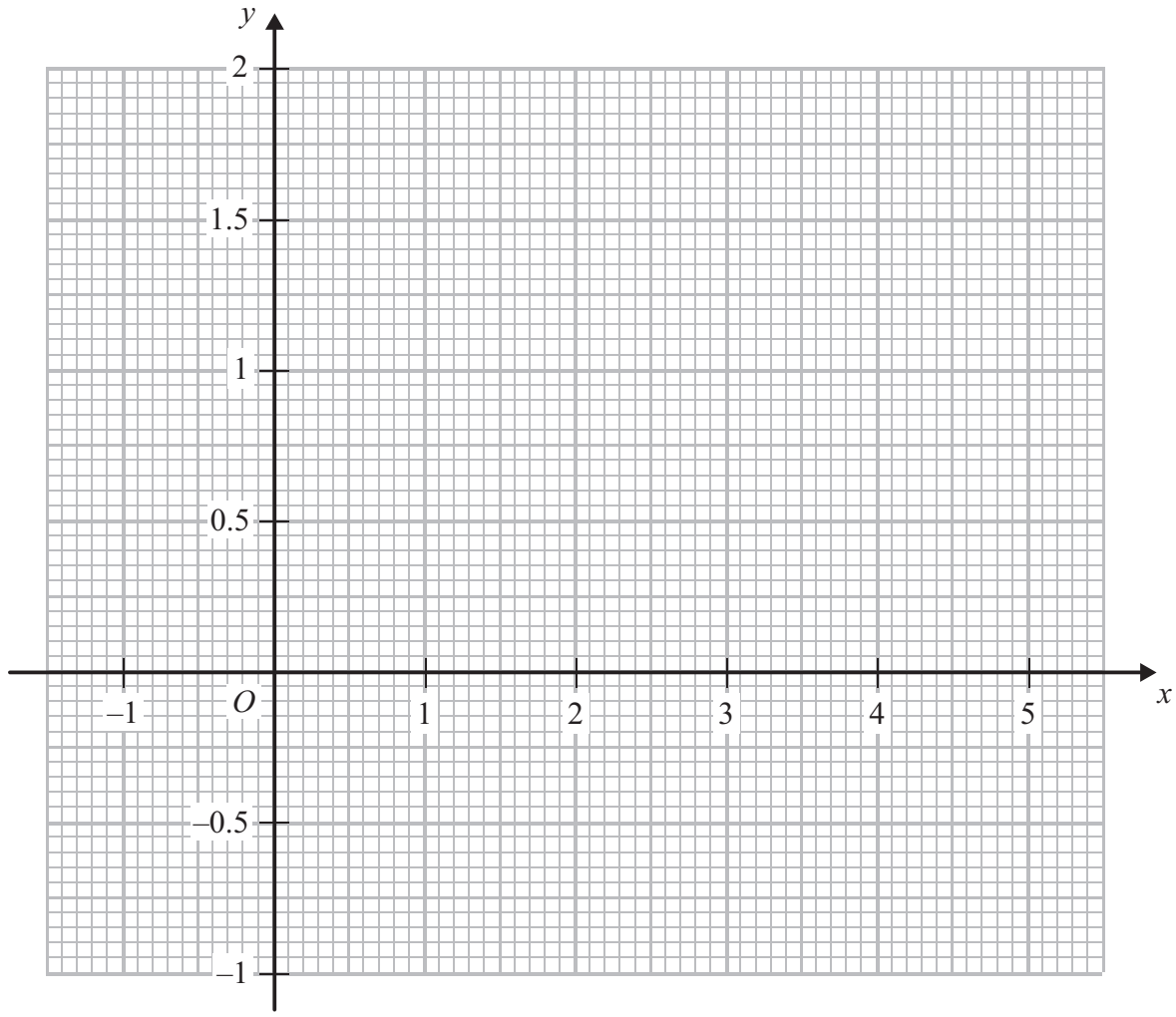


Turn over for a spare grid if you need to redraw your graph.

Question 7 continued

Question 7 continued

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



(Total for Question 7 is 10 marks)