8 The equation of a curve C is $y = x^2 - \frac{3}{2}x - 1$

The curve C has a minimum at the point A

(a) Show that the coordinates of A are (0.75, –1.5625)

(4)

(b) Complete the table of values for $y = x^2 - \frac{3}{2}x - 1$

x	–3	–2	–1	0	1	2	3	4
y	12.5						3.5	

(3)

The point A has been plotted on the grid opposite.

(c) On the grid opposite, draw the curve with equation $y = x^2 - \frac{3}{2}x - 1$ for values of x from –3 to 4

(3)

(d) Using your curve, find an estimate, to one decimal place, for the range of values of x for which $x^2 - \frac{3}{2}x - 1 \leqslant 3$

Show your working clearly.

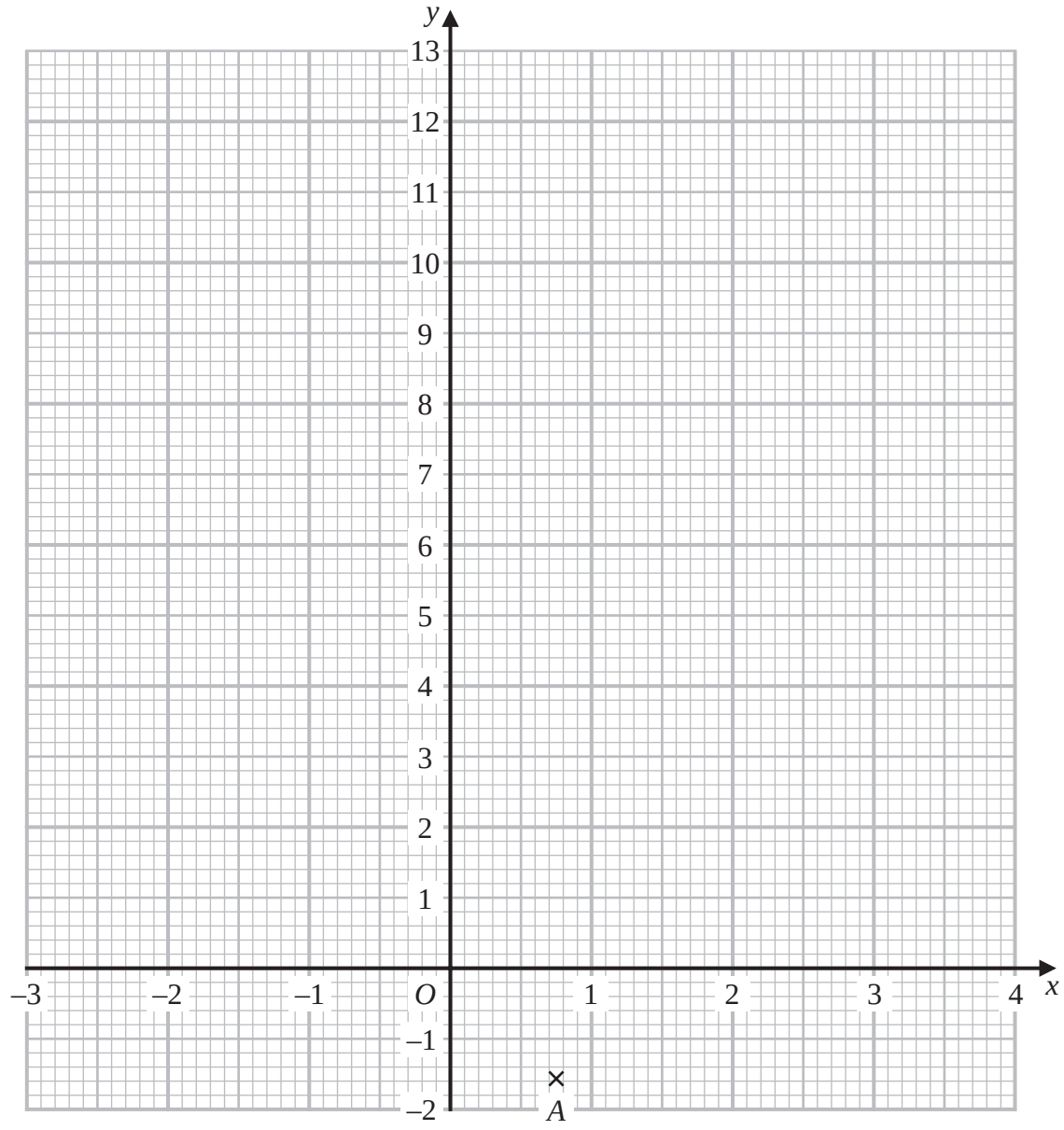
(2)

(e) By drawing a suitable straight line on the grid, find estimates, to one decimal place, of the solutions of the equation $x^2 - \frac{7}{2}x = \frac{1}{2}$

Show your working clearly.

(3)

Question 8 continued

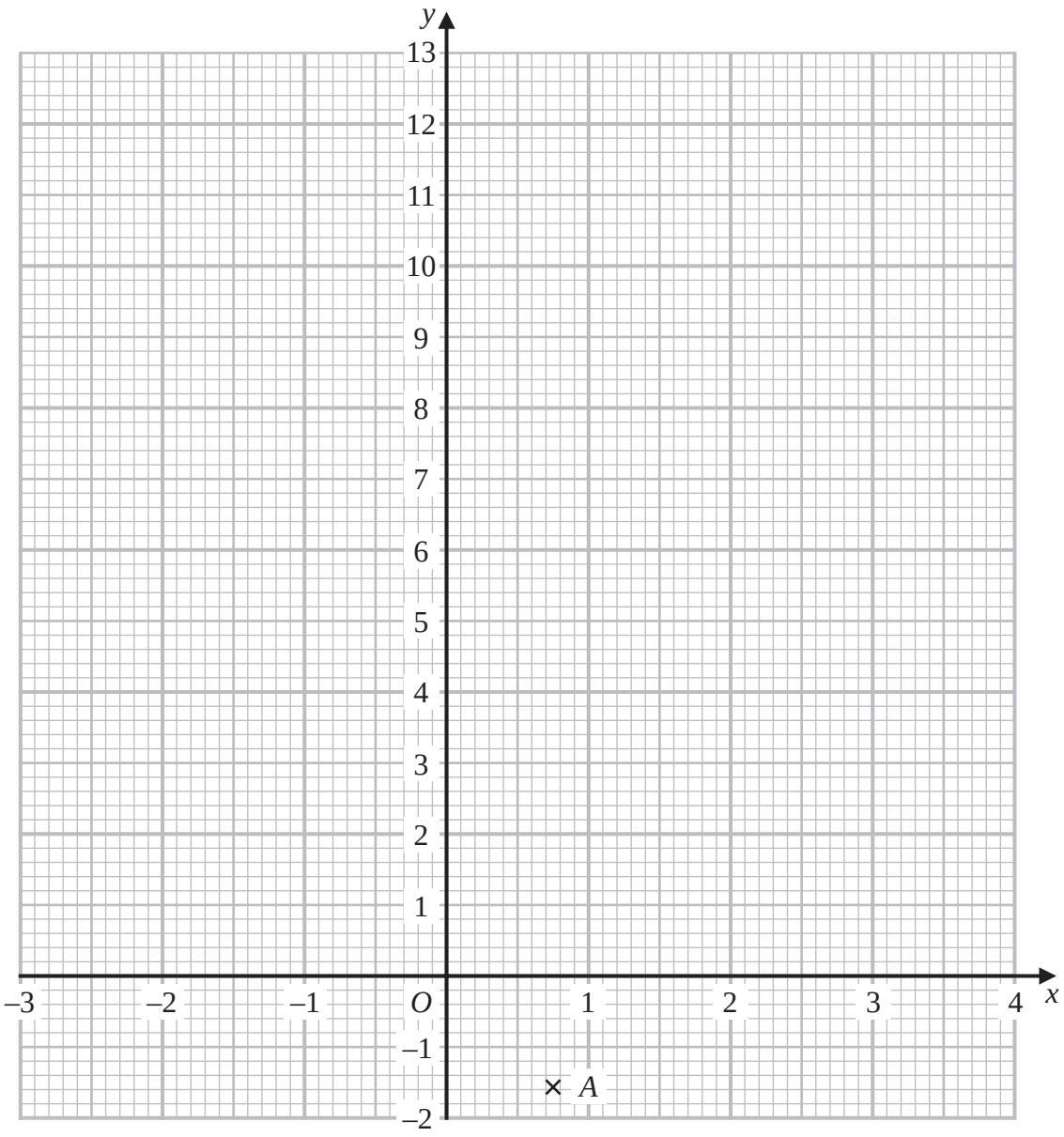


Turn over for a spare grid if you need to redraw your graph.

Question 8 continued

Question 8 continued

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



(Total for Question 8 is 15 marks)