

Question	Answer	Marks	Guidance
(a)	Draw correct sketch of $y = 5 - 2x $	*B1	with vertex on positive x -axis
	Draw correct sketch of $y = 3 \ln x$	*B1	
	Indicate the two roots either on the diagram or by a statement	DB1	
		3	

Question	Answer	Marks	Guidance
(b)	State $2x - 5 = 3 \ln x$ and rearrange to confirm $x = 2.5 + 1.5 \ln x$	B1	AG – necessary detail needed
		1	
(c)	Consider sign of $x - 2.5 - 1.5 \ln x$, or equivalent, for 4.5 and 5.0	M1	
	Obtain $-0.25...$ and $0.08...$ or equivalents and justify conclusion	A1	AG – necessary detail needed
	Alternative method for question 5(c)		
	Consider sign of $ 5 - 2x - 3 \ln x$, or equivalent, for 4.5 and 5.0	M1	
	Obtain $-0.51...$ and $0.17...$ or equivalents and justify conclusion	A1	AG – necessary detail needed
		2	
(d)	Use iteration process correctly at least once	M1	
	Obtain final answer 4.88	A1	Answer required to exactly 3 s.f.
	Show sufficient iterations to 5 s.f. to justify answer or show sign change in interval $[4.875, 4.885]$	A1	
		3	

