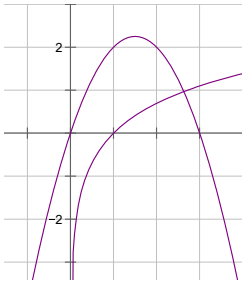
Question	Answer	Marks	Guidance
(a)	Sketch a relevant graph, e.g. $y = \ln x$	**B1**	 $\ln(x)$: sketch should imply y-axis is an asymptote. Through (1, 0) if marked. Correct shape. $3x - x^2$: Symmetrical. Through (0, 0) and (3, 0) if marked. If $\ln(x)$ correct accept parabola for +ve y only. If $\ln(x)$ incorrect then need parabola in 3 quadrants.
	Sketch a second relevant graph, e.g. $y = 3x - x^2$, **and** justify the given statement by marking the root on the sketch or by use of a suitable comment	**B1**	
		2	
(b)	Calculate the values of a relevant expression or pair of expressions at $x = 2$ and $x = 2.8$	**M1**	Allow for a smaller interval. At least one value correct if comparing with 0. If using pairs then the pairing must be clear.
	Complete the argument correctly with correct calculated values	**A1**	e.g. $0.693 < 2$ and $1.03 > 0.56$ or $1.307 > 0, -0.47 < 0$ using $\sqrt{3x - \ln x}$ $0.304 > 0, -0.085 < 0$. Need to have calculated values to at least 2 sf.
		2	

Question	Answer	Marks	Guidance
(c)	Use the iterative process correctly at least once	**M1**	
	Obtain final answer 2.63	**A1**	
	Show sufficient iterations to at least 4 dp to justify 2.63 to 2 dp or show there is a sign change in the interval (2.625, 2.635)	**A1**	**SC** Allow **M1 A1 A0** to a candidate who starts at a point in the interval and reaches a premature conclusion
		3	