Question	Answer	Marks	Guidance
(a)	Use <i>y</i> -values [ln1], ln2, ln3, ln4	B1	but not their decimal equivalents
	Use correct formula, or equivalent, with $h=1$	M1	allow with decimal equivalents
	Use both relevant logarithm properties correctly	M1	
	Obtain $\frac{1}{2}[\ln 1 + 2 \ln 2 + 2 \ln 3 + \ln 4]$ and hence $\ln 12$	A1	AG – necessary detail needed
		4	

Question	Answer	Marks	Guidance
(b)	Sketch correct graph of $y = \ln x$ for at least $y \ge 0$	*B1	
	Indicate that top of each trapezium is below curve or clear equivalent	DB1	but B0 if only one chord shown from (1, 0) to (4, ln 4) allow 'concave down'
		2	