

STEP III, 2002 Q1

- 1 Find the area of the region between the curve $y = \frac{\ln x}{x}$ and the x -axis, for $1 \leq x \leq a$. What happens to this area as a tends to infinity?

Find the volume of the solid obtained when the region between the curve $y = \frac{\ln x}{x}$ and the x -axis, for $1 \leq x \leq a$, is rotated through 2π radians about the x -axis. What happens to this volume as a tends to infinity?



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