Consider the following integral.

$$\int_0^1 \int_{e^y}^e \frac{x}{\ln(x)}\, dx\, dy.$$

Sketch its region of integration in the xy-plane.

(a) Which graph shows the region of integration in the xy-plane? ?

(b) Write the integral with the order of integration reversed:

$$\int_0^1 \int_{e^y}^e \frac{x}{\ln(x)}\, dx\, dy = \int_A^B \int_C^D \frac{x}{\ln(x)}\, dy\, dx$$

with limits of integration

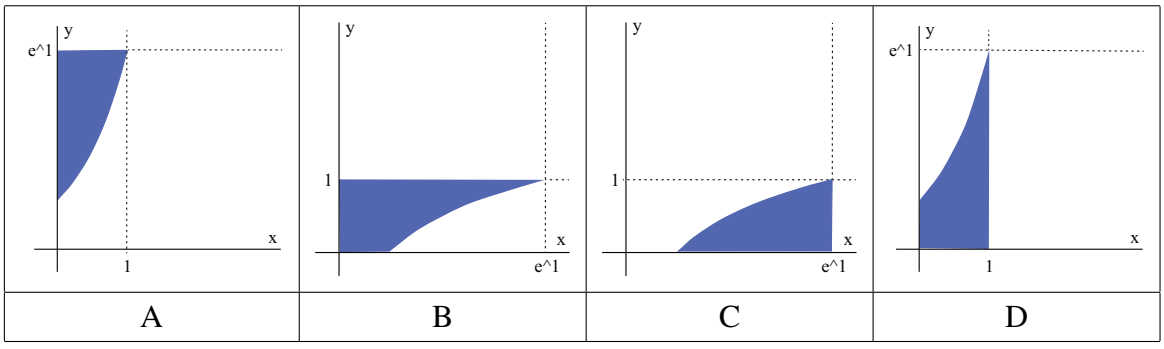
$A =$

$B =$

$C =$

$D =$

(c) Evaluate the integral.



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with limits of integration

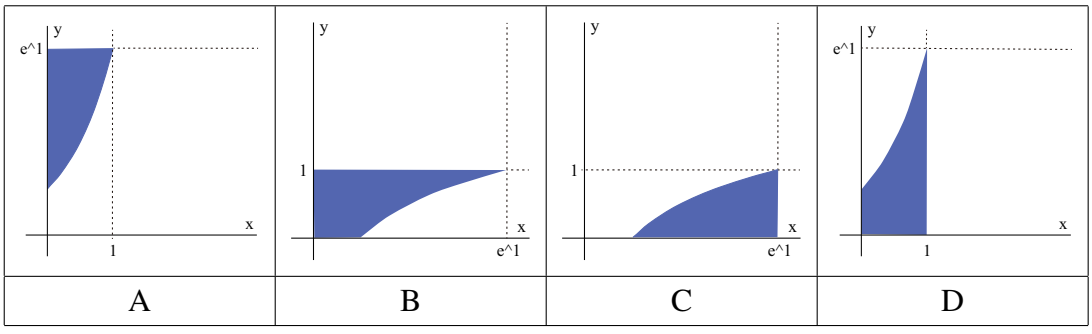
$A =$ 1

$B =$ e

$C =$ 0

$D =$ $\ln(x)$

(c) Evaluate the integral. $(e^2 - 1)/2$



A	B	C	D