Conditions

find the are of the curve bounded by if y=lnx and x=3.3 to x=2.2.2

Solution

To find this area we must calculate the following integral:

$$\int \ln x\,dx = \begin{bmatrix} u = \ln x & du = \frac{1}{x}dx \\ dv = dx & v = x \end{bmatrix} = x\ln x - \int dx = x\ln x - x + c$$

Now we must substitute the given values to this integral as a defined integral:

$$\int_{2.2}^{3.3} \ln x\,dx = 3.3\ln 3.3 - 3.3 - 2.2\ln 2.2 + 2.2 = \mathbf{3.3\ln 3.3 - 2.2\ln 2.2 - 1.1}$$

This value is approximately equal to a 1.10534