Part (a)

Anubhav Shankar

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The specialized version of the Monte-Carlo Integration is given by the following equation:

$\hat{I_N} = \left(\frac{2}{N}\right) \times \sum_{i=1}^{N} \left(\frac{1}{1+x_i^2}\right)$

here, $x_i \in [a, b]$

also, V = b-a

where, a and b are the lower and upper bounds respectively.