Método del Trapecio

- $\int_1^2 \frac{e^x}{x}$

$a = 1$
$b = 2$
$n = 14$

$\Delta x = \frac{b-a}{n}$ $\quad \Delta x = \frac{1}{14}$

$\Delta x = \frac{2-1}{14}$

$f(x) = \frac{e^x}{x}$

- Iteración #14

- $A_{14} = \frac{\Delta x}{2}\left[f(1) + 2f\left(\frac{20}{14}\right) + 2f\left(\frac{21}{14}\right) + 2f\left(\frac{22}{14}\right) + 2f\left(\frac{23}{14}\right) + 2f\left(\frac{24}{14}\right)\right.$
$+ 2f\left(\frac{25}{14}\right) + 2f\left(\frac{26}{14}\right) + 2f\left(\frac{27}{14}\right) + 2f\left(\frac{28}{14}\right) + 2f\left(\frac{29}{14}\right)$
$+ 2f\left(\frac{30}{14}\right) + 2f\left(\frac{31}{14}\right) + 2f\left(\frac{32}{14}\right) + 2f\left(\frac{33}{14}\right) + 2f\left(\frac{34}{14}\right)$
$\left. + 2f\left(\frac{35}{14}\right) + 2f\left(\frac{36}{14}\right) + 2f\left(\frac{37}{14}\right) + f(2)\right]$

- $A_{14} = \frac{\frac{1}{14}}{2}\left[116,2626\right]$

$A_{14} = 3.05954$

- Iteración #20

$a = 1$
$b = 2$
$n = 20$

$\Delta x = \frac{2-1}{20}$

$\Delta x = \frac{1}{20}$

$f(x) = \frac{e^x}{x}$

- $A_{20} = \frac{\Delta x}{2}\left[f(1) + 2f\left(\frac{21}{20}\right) + 2f\left(\frac{22}{20}\right) + 2f\left(\frac{23}{20}\right) + 2f\left(\frac{6}{5}\right) + 2f\left(\frac{5}{4}\right)\right.$
$+ 2f\left(\frac{13}{10}\right) + 2f\left(\frac{27}{20}\right) + 2f\left(\frac{7}{5}\right) + 2f\left(\frac{29}{20}\right) + 2f\left(\frac{3}{2}\right)$
$+ 2f\left(\frac{31}{20}\right) + 2f\left(\frac{8}{5}\right) + 2f\left(\frac{33}{20}\right) + 2f\left(\frac{17}{10}\right) + 2f\left(\frac{7}{4}\right)$
$\left. + 2f\left(\frac{9}{5}\right) + 2f\left(\frac{37}{20}\right) + 2f\left(\frac{19}{10}\right) + 2f\left(\frac{39}{20}\right) + f(2)\right.$

- $A_{20} = \frac{\frac{1}{20}}{2}\left[122,38005\right]$

$A_{20} = 3.05950$