

Meza Vargas Brandon David - ACM11
Tarea 5

Evalúe

$$I = \int_0^i z \cos z \, dz$$

Por Partes

$$\begin{aligned} u &= z & dv &= \cos z \\ du &= dz & v &= \sin z \end{aligned} \Rightarrow I = z \sin z - \int_0^i \sin z \, dz$$

$$= (z \sin z + \cos z) \Big|_0^i$$

$$= (i \sin i + \cos i) - (\cos(0))$$

$$= i \sin i + \cos i - 1$$

Sabemos que $\sin(iz) = i \sinh z$; $\cos(iz) = \cosh z$

$$= i^2 \sinh 1 + \cosh 1 - 1$$

$$= i^2 0.84 + 0.54 - 1 = -0.84 + 0.54 - 1$$

$$= -1.3$$

$$\therefore \underline{\underline{I = -1.3}}$$