

Answer on question #51702 | Math, Integral Calculus

What is the definite integral of this $e^{|x|}$. limit is from -2 to +8?

Solution

$$\begin{aligned}\int_{-2}^8 e^{|x|} dx &= \int_{-2}^0 e^{-x} dx + \int_0^8 e^x dx = -\int_{-2}^0 e^{-x} d(-x) + \int_0^8 e^x dx = -e^{-x} \Big|_{-2}^0 + e^x \Big|_0^8 = \\ &= -1 + e^2 + e^8 - 1 = e^8 + e^2 - 2\end{aligned}$$