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$$\rightarrow \int_0^b x^2 e^{-x}\,dx = -e^{-x}x^2\Big|_0^b + \int_0^b 2x e^{-x}\,dx$$

$u = x^2 \quad dv = e^{-x}dx$

$du = 2x\,dx \quad v = -e^{-x}$

$$\rightarrow 2\int_0^b x e^{-x}\,dx = 2\left[-xe^{-x}\Big|_0^b + \int_0^b e^{-x}\,dx\right] = \cdots$$

$u = x \quad dv = e^{-x}dx$

$du = dx \quad v = -e^{-x}$

$$\cdots = 2\left[-xe^{-x}\Big|_0^b - e^{-x}\Big|_0^b\right]$$

$$\rightarrow \int_0^b x^2 e^{-x}\,dx = -e^{-x}x^2\Big|_0^b + 2\left[-xe^{-x}\Big|_0^b - e^{-x}\Big|_0^b\right]$$

$$\rightarrow -4\int_0^b x e^{-x}\,dx = -4\left[-xe^{-x}\Big|_0^b + \int_0^b e^{-x}\,dx\right] = -4\left[-xe^{-x}\Big|_0^b - e^{-x}\Big|_0^b\right]$$

$u = x \quad dv = e^{-x}dx$

$du = dx \quad v = -e^{-x}$