

$$\begin{aligned}
\int x^2 e^x dx &= x^2 e^x - 2 \int x e^x dx = \\
&= x^2 e^x - 2 \left(x e^x - \int e^x dx \right) = \\
&= x^2 e^x - 2 x e^x + 2 e^x + C
\end{aligned} \tag{1}$$