(6.1.4) $I = \int (x^2 - 2x) e^{kx} dx$.

$U = x^2 - 2x$, $dV = e^{kx} dx$

$dU = (2x - 2) dx$, $V = \frac{e^{kx}}{k}$

$I = \int U dV = UV - \int V dU$

$= (x^2 - 2x) \frac{e^{kx}}{k} - \underbrace{\int \frac{e^{kx}}{k} (2x - 2) dx}_{II}$

$U = 2x - 2$, $dV = \frac{e^{kx}}{k} dx$

$dU = 2 dx$, $V = \frac{e^{kx}}{k^2}$

$II = \int U dV = UV - \int V dU$

$= (2x - 2) \frac{e^{kx}}{k^2} - \underline{\int \frac{e^{kx}}{k^2} 2 dx}$

$= (2x - 2) \frac{e^{kx}}{k^2} - \frac{2}{k^3} e^{kx} + C$

$I = (x^2 - 2x) \frac{e^{kx}}{k} - II$

$= \underline{(x^2 - 2x) \frac{e^{kx}}{k} - (2x - 2) \frac{e^{kx}}{k^2} + \frac{2}{k^3} e^{kx} - C.}$