

$$\int \underbrace{x^2}_f \underbrace{e^{sx}}_{g'} dx \stackrel{(1)}{=} \underbrace{x^2}_f \cdot \underbrace{\frac{1}{s} e^{sx}}_g - \int \underbrace{2x}_{f'} \cdot \underbrace{\frac{1}{s} e^{sx}}_g dx$$

por [IP] com: $f(x) := x^2$
 $g(x) := \frac{1}{s} e^{sx}$

$$\stackrel{(2)}{=} x^2 \cdot \frac{1}{s} e^{sx} - 2 \cdot \frac{1}{s} \int \underbrace{x}_f \underbrace{e^{sx}}_{g'} dx$$

$$\stackrel{(3)}{=} x^2 \cdot \frac{1}{s} e^{sx} - 2 \cdot \frac{1}{s} \left(\underbrace{x}_f \cdot \underbrace{\frac{1}{s} e^{sx}}_g - \int \underbrace{1}_{f'} \cdot \underbrace{\frac{1}{s} e^{sx}}_g dx \right)$$

por [IP] com $f(x) := x$,
 $g(x) := \frac{1}{s} e^{sx}$

$$\stackrel{(4)}{=} \frac{1}{s} x^2 e^{sx} - \frac{2}{s^2} x e^{sx} + \frac{2}{s^2} \int e^{sx} dx$$

$$\stackrel{(5)}{=} \frac{1}{s} x^2 e^{sx} - \frac{2}{s^2} x e^{sx} + \frac{2}{s^2} e^{sx}$$

$$\int \underbrace{x}_f \underbrace{e^{sx}}_{g'} dx = \underbrace{x}_f \cdot \underbrace{\frac{1}{s} e^{sx}}_g - \int \underbrace{1}_{f'} \cdot \underbrace{\frac{1}{s} e^{sx}}_g dx$$