

## Indefinite integral example

Calculate indefinite integral of function below

$$\int x \cdot e^x \cdot dx$$

Formula for calculating indefinite integral by parts will be used

$$\int f'(x) \cdot g(x) \cdot dx = f(x) \cdot g(x) - \int f(x) \cdot g'(x) \cdot dx$$

$$\int x \cdot e^x \cdot dx = \begin{cases} f'(x) = 1 & g(x) = e^x \\ f(x) = x & g'(x) = e^x \end{cases}$$

$$x \cdot e^x - \int e^x \cdot dx = x \cdot e^x - e^x + C = e^x \cdot (x - 1) + C$$