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## Intégration par parties

$$\int x \ln(x) dx$$

$$\int x^2 \sin(x) dx$$

$$\int e^x (1-x) dx$$

$$\int e^{2x} x dx$$

$$\int x^2 \ln(x) dx$$

$$\int (1+x) \cos(x) dx$$

$$\int \arcsin(x) dx$$

$$\int x^2 \cos(3x) dx$$

$$\int \frac{\ln(t)}{t^2} dt$$

$$\int x \sqrt{1+x} dx$$

$$\int e^x \sin(x) dx$$

$$\int e^{1-x} x dx$$

## ■ Solutions

$$\int x \ln(x) dx = \frac{1}{2} x^2 \ln(x) - \frac{x^2}{4} + k$$

$$\int x^2 \sin(x) dx = 2x \sin(x) - (x^2 - 2) \cos(x) + k$$

$$\int e^x (1-x) dx = -e^x (x-2) + k$$

$$\int e^{2x} x dx = e^{2x} \left( \frac{x}{2} - \frac{1}{4} \right) + k$$

$$\int x^2 \ln(x) dx = \frac{1}{3} x^3 \ln(x) - \frac{x^3}{9} + k$$

$$\int (1+x) \cos(x) dx = \cos(x) + x \sin(x) + \sin(x) + k$$

$$\int \arcsin(x) dx = x \arcsin(x) + \sqrt{1-x^2} + k$$

$$\int x^2 \cos(3x) dx = \frac{2}{9} x \cos(3x) + \frac{1}{27} (9x^2 - 2) \sin(3x) + k$$

$$\int \frac{\ln(t)}{t^2} dt = -\frac{\ln(t)}{t} - \frac{1}{t} + k$$

$$\int x \sqrt{1+x} dx = \frac{2}{15} (x+1)^{3/2} (3x-2) + k$$

$$\int e^x \sin(x) dx = \frac{1}{2} e^x (\sin(x) - \cos(x)) + k$$

$$\int e^{1-x} x dx = e^{-x} (-e x - e) + k$$