

Integration by Parts

Evaluate each indefinite integral using integration by parts. u and dv are provided.

1) $\int xe^x dx; \ u = x, \ dv = e^x dx$

2) $\int x \cos x dx; \ u = x, \ dv = \cos x dx$

3) $\int x \cdot 2^x dx; \ u = x, \ dv = 2^x dx$

4) $\int \sqrt{x} \ln x dx; \ u = \ln x, \ dv = \sqrt{x} dx$

Evaluate each indefinite integral.

5) $\int xe^{-x} dx$

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

7) $\int \frac{x^2}{e^{2x}} dx$

8) $\int x^2 e^{5x} dx$

9) $\int \ln(x+3) dx$

10) $\int \cos 2x \cdot e^{-x} dx$