

Practices on Integration by parts

1. $\int x^2 \sin x dx$ [Use integration by parts twice.]
2. $\int xe^{3x} dx$
3. $\int \ln x dx$
4. $\int 2x\sqrt{3x-2} dx$
5. $\int x \ln x dx$
6. $\int x^2 \ln x dx$
7. $\int \ln^2 x dx$
8. $\int x \ln^2 x dx$ [Let $u = \ln^2 x$ and $dv = x dx$.]
9. $\int_0^1 3x\sqrt{2x^2+3} dx$
10. $\int_e^{e^2} \frac{\ln x}{x} dx$
11. $\int_1^e 5 \ln x^2 dx$
12. $\int x7^x dx$ [Let $u = x$ and $dv = 7^x dx$.]
13. $\int_1^e 3(\ln x)^2 dx$
14. $\int_{e^2}^{e^6} \frac{dx}{x \ln x}$
15. $\int_2^4 \ln(2x+3) dx$
16. $\int e^x \sin x dx$
17. $\int e^{2x} \cos x dx$
18. $\int x^2 e^x dx$
19. $\int (\ln x)^2 dx$
20. $\int x(\ln x)^2 dx$ [Let $u = (\ln x)^2$ and $dv = x dx$.]
21. $\int x^3 \cos x^2 dx$ [Let $u = x^2$ and $dv = x \cos x^2 dx$]
22. Use integration by parts to evaluate $\int \sin x \cos x dx$.