

Evaluate the following integrals:

1. $\int (4x + 3)^{-3} dx$ (HINT: Let $u = 4x + 3$.)
2. $\int \frac{(\ln x)^3}{x} dx$ (HINT: Let $u = \ln x$.)
3. $\int \frac{e^{1/x}}{x^2} dx$ (HINT: Let $u = 1/x$.)
4. $\int \frac{x}{1+x} dx$ (HINT: Let $u = 1+x$.)
5. $\int \frac{x}{(2x^2 + 1)^3} dx$.
6. $\int xe^{x^2} dx$
7. $\int \frac{z^2}{1+z^6} dz$
8. $\int \frac{x}{\sqrt{1+x^2}} dx$
9. $\int \frac{2x+3}{(x^2+3x+5)^4} dx$
10. $\int \frac{e^{2x}}{(1+e^{2x})^3} dx$
11. $\int \frac{2x+3}{(x+1)^2} dx$
12. $\int \sec x \tan x dx$
13. $\int \frac{5t}{3t^2+4} dt$
14. $\int (\tan x)^2 \csc x dx$
15. $\int \frac{\cos \theta}{(\sin \theta)^4} d\theta$
16. $\int \frac{1}{\sqrt{x}(\sqrt{x}+2)^3} dx$
17. $\int \frac{e^x}{e^{2x} + 2e^x + 1} dx$
18. $\int \tan(\theta) d\theta$
19. $\int (\sin x)^3 \cos x dx$
20. $\int x(3x+2)^4 dx$
21. $\int x\sqrt{3x-2} dx$
22. $\int 2^x dx$
23. $\int_{\frac{1}{3}}^1 (3x-2)^4 dx$
24. $\int_{-19}^8 \sqrt[3]{8-x} dx$
25. $\int_1^e \frac{\sin(\ln(x))}{x} dx$
26. $\int_{-\frac{\pi}{2}}^{\pi} e^{\cos(x)} \sin(x) dx$