

Describe how to evaluate the following integrals. Use Maple to evaluate the integral. For example, to evaluate $\int \frac{x}{x^2+1} dx$ you would make the substitution $u = x^2 + 1$, but then you would use Maple to actually work out the answer.

1. $\int (3x - 2)^4 dx$

2. $\int \frac{1}{\sqrt{x}(1-2\sqrt{x})} dx$

3. $\int \frac{3}{\sqrt{1-t^2}} dt$

4. $\int \frac{3t}{\sqrt{1-t^2}} dt$

5. $\int \frac{\sqrt{x^2+4}}{x} dx$

6. $\int \frac{x}{\sqrt{x^2+4}} dx$

7. $\int t \sin(t^2) dt$

8. $\int \sec(3x) \tan(3x) dx$

9. $\int \sin^3(x) \cos^2(x) dx$

10. $\int \sin^2(x) \cos^2(x) dx$

11. $\int \cos(x) e^{\sin(x)} dx$

12. $\int (-2x + 5)^{\frac{3}{2}} dx$

13. $\int t^2 \sqrt{t^3 - 1} dx$

14. $\int \frac{x^2}{x-1} dx$

15. $\int \frac{x^2-1}{x(x-2)(x+2)} dx$

16. $\int \frac{x^3-1}{x^3+4x^2+4x} dx$

17. $\int \frac{2}{e^{-x}+1} dx$

18. $\int \frac{\ln(x^2)}{x} dx$