

Math 134: Calculus 2 with Fundamentals

Spring 2019

Professor Levandosky

Practice Integrals

1. $\int \frac{x^3}{x^4 - 1} dx$ (substitution)
2. $\int \frac{x^2}{x^4 - 1} dx$ (partial fractions)
3. $\int \frac{x}{x^4 + 1} dx$ (write $x^4 = (x^2)^2$ then make a substitution)
4. $\int x^3 \tan^{-1}(x) dx$ (parts)
5. $\int \frac{1}{1 + \sqrt{x}} dx$ (substitution)
6. $\int e^{x^{1/3}} dx$ (substitution, then parts)
7. $\int \frac{1}{2 + e^{-x}} dx$ (multiply numerator and denominator by e^x , then substitute)
8. $\int x^3 \ln(x) dx$ (parts)
9. $\int \sqrt{1 + e^x} dx$ (substitution)
10. $\int \sqrt{x^2 + x^4} dx$ (Simplify then substitution)
11. $\int \frac{e^x}{e^{2x} + 4} dx$ (substitution)
12. $\int x\sqrt{4 - x^4} dx$ (substitution, then trig substitution)
13. $\int \ln(x^2 + 1) dx$ (parts)
14. $\int \frac{\sqrt{x}}{x^3 + 1} dx$ (substitution)
15. $\int \frac{1}{\sqrt{4x^2 - 1}} dx$ (trigonometric substitution)