

Math 211 Calculus I

Look in your integrand for these two factors:

- * an “inside” function and
- * its derivative

Substitution might result in an integral you can solve more easily.

Important Concepts:

- Substitution Rule - how it comes from the Chain Rule and how it is used.

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

5. $\int \cos^3 x \sin x \, dx$

2. $\int \pi \cos(\pi x) \, dx$

6. $\int \frac{3x^2}{\sqrt{x^3 + 5}} \, dx$

3. $\int x(4x^2 + 3)^2 \, dx$

7. $\int x^2 \sqrt{x-5} \, dx$

4. $\int \sin(3x) \, dx$