

Substitution Rule

Examples

1. Find $\int_0^{16} \sqrt{4 - \sqrt{x}} dx$.
2. Find $\int \sin(x) \cos(x) dx$ using $u = \sin(x)$ and then $u = \cos(x)$. Comment on the result.

Problems

3. Find $\int \frac{\ln x}{x} dx$.
4. Find $\int \frac{1}{x \ln x} dx$.
5. Find $\int x \sqrt{1 - x} dx$.
6. Find $\int_0^{\sqrt{\pi}} x \cos(x^2) dx$.
7. Find $\int \sin(x) \sec^2(x) dx$.
8. Find $\int 2x e^{e^{x^2}} e^{x^2} dx$.