

Evaluate each of the following integrals. Be sure that your answers are in terms of the same variables as the original integral. Note that not every integral necessarily requires substitution.

1. (4) $\int 2 \sin^2(2\theta) \cos(2\theta) d\theta$

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

3. (4) $\int 2x^3\sqrt{x^2+1} dx$

4. (4) $\int_0^1 \frac{14}{\sqrt[3]{7t+1}} dt$

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