

Transcendental Functions (5.8)

This chapter gives you more practice integrating and adds transcendental functions in some of the integrands.

$$\text{Recall } \frac{db^x}{dx} = \ln(b)b^x, \quad \frac{d \arcsin(x)}{dx} = \frac{1}{\sqrt{1-x^2}}, \text{ and } \quad \frac{d \arctan(x)}{dx} = \frac{1}{1+x^2}.$$

$$\text{Find } \int_{\frac{1}{\sqrt{3}}}^{\sqrt{3}} \frac{1}{1+x^2} dx.$$

$$\text{Find } \int_2^7 \frac{x}{1+x^2} dx.$$

Find $\int_0^4 \frac{dt}{4t^2 + 9}$.

Find $\int 2^p e^{4p} dp$.

Find $\int_{-0.2}^{0.2} \frac{\sin(\theta)}{\sqrt{4-25\theta^2}} d\theta$.

Find $\int \frac{dx}{x \ln^5(x)} dx$.

Find $\int_0^{0.5} \frac{dx}{\sqrt{1-x^2}}$.

Find $\int (w - w^{-2})^2 dw$. Hint: Substitution doesn't always work.