

## 5.6 Substitution with Definite Integrals

EXAMPLE: Integrate by substitution:  $\int_0^4 x \cdot \sqrt{9+x^2} \, dx$ .

EXAMPLE: Integrate by substitution:  $\int_0^{\frac{\pi}{2}} \frac{\sin \theta}{(3 + 2 \cos \theta)^2} d\theta$ .

EXAMPLE: Integrate by substitution:  $\int_{\frac{\pi}{4}}^{\pi} \sqrt{\tan \theta} \sec^2 \theta d\theta$ .

EXAMPLE: Find the definite integral:  $\int_0^1 \frac{1}{\sqrt{4-x^2}} dx$ .

EXAMPLE: Find the indefinite integral:  $\int_e^{e^2} \frac{1}{x \ln x} dx$ .