

4.3 EVALUATING DEFINITE INTEGRALS

EXAMPLE A Evaluate $\int \frac{\cos \theta}{\sin^2 \theta} d\theta$.

SOLUTION This indefinite integral isn't immediately apparent in Table 1, so we use trigonometric identities to rewrite the function before integrating:

$$\begin{aligned}\int \frac{\cos \theta}{\sin^2 \theta} d\theta &= \int \left(\frac{1}{\sin \theta} \right) \left(\frac{\cos \theta}{\sin \theta} \right) d\theta \\ &= \int \csc \theta \cot \theta d\theta = -\csc \theta + C\end{aligned}$$