

**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:

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