**Integration Tables/Misc.**

In addition to the integral forms that we have memorized, the techniques we have learned (integration by parts, trig substitution, partial fractions) and technology, another tool used in integration is the use of a Table of Integrals found in the Appendix of your textbook. The following examples illustrate how one can use a table of integrals to evaluate an integral.

**1.** $$\int \frac{e^x dx}{1 - \tan e^x}$$

**2.** $$\int \frac{dx}{x\sqrt{x+9}}$$

**3.** $\displaystyle\int \frac{\sqrt{x^2-4}}{x}\,dx$

**4.** $\displaystyle\int e^{-2x}\cos 3x\,dx$

**5.** $\displaystyle\int x^3 \sin 2x \, dx$

**6.** $\int x^2 \sqrt{9 + x^2}\, dx$

**7.** $\int \frac{\sin 2x}{2 + \cos x} dx$

To integrate rational functions involving sine and cosine it is sometimes helpful to make the substitution $u = \frac{sinx}{1 + cosx} = tan\frac{x}{2}$

$u =$ $cosx =$ $sinx =$ $dx =$

**8.** $\displaystyle\int \frac{dx}{3 - 2\cos x}$

**9.** $$\int \frac{dx}{1 + \sin x - \cos x}$$