Problem statement Some antiderivatives can be computed using "rationalizing substitutions" to change the integrals into integrals of rational functions which then can be computed using partial fractions. Here are some examples.

a) $\int \frac{1}{x+3\sqrt{x}+2}\,dx$ (Try $t = \sqrt{x}$.)

b) $\int \frac{e^x+1}{e^{2x}+1}\,dx$ (Try $t = e^x$.)

c) $\int \frac{\cos\theta}{1-(\sin\theta)^2}\,d\theta$ (Try $t = \sin\theta$*.)

* You've just integrated sec. Was the result ln(sec + tan)?