Table of Antiderivatives

Table of antiderivatives of basic functions (table 7.2.1 in the textbook)

Function	Antiderivative	Function	Antiderivative
$f(x) = k$ (k is constant)	$F(x) = kx + C$	$f(x) = \cos x$	$F(x) = \sin x + C$
$f(x) = x^n$ (if $n \neq 1$)	$F(x) = \frac{x^{n+1}}{n+1} + C$	$f(x) = \sec^2 x$	$F(x) = \tan x + C$
$f(x) = x^{-1} = \frac{1}{x}$	$F(x) = \ln(\lvert x \rvert) + C$	$f(x) = \sec x \tan x$	$F(x) = \sec x + C$
$f(x) = e^x$	$F(x) = e^x + C$	$f(x) = \frac{1}{1+x^2}$	$F(x) = \arctan x + C$
$f(x) = \sin x$	$F(x) = -\cos x$	$f(x) = \frac{1}{\sqrt{1-x^2}}$	$F(x) = \arcsin x + C$

Also remember,

$$(a^x)' = a^x \ln a\,,$$

so

$$\int a^x\,dx = \frac{a^x}{\ln a} + C\,.$$