Table of common antiderivatives:

Function	Particular antiderivative	Function	Particular antiderivative
$cf(x)$	$cF(x)$	$\sin x$	$-\cos x$
$f(x)+g(x)$	$F(x)+G(x)$	$\sec^2 x$	$\tan x$
$x^n (n \neq 1)$	$\frac{x^{n+1}}{n+1}$	$\sec x \tan x$	$\sec x$
$\frac{1}{x}$	$\ln \lvert x \rvert$	$\frac{1}{\sqrt{1-x^2}}$	$\sin^{-1} x$
e^x	e^x	$\frac{1}{1+x^2}$	$\tan^{-1} x$

Note that the following formulas may not be applicable in every situation, and may need to be manipulated to suit individual problems.

Volume by disks/washers:

$$V = \int_a^b \pi(R^2 - r^2)dx \qquad \text{or} \qquad V = \int_a^b \pi(R^2 - r^2)dy$$

Volume by cylindrical shells:

$$V = \int_a^b 2\pi rhdx \qquad \text{or} \qquad V = \int_a^b 2\pi rhdy$$

Work: The work done to move an object along a line from a to b by force $f(x)$ is

$$W = \int_a^b f(x)dx.$$

Hooke's Law: The force required to hold a spring distance x beyond its natural length is

$$F = kx.$$