Some formulas, identities, and numeric values you might find useful:

Values of trig functions:

θ	$\sin\theta$	$\cos\theta$	$\tan\theta$
0	0	1	0
$\frac{\pi}{6}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$
$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1
$\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$
$\frac{\pi}{2}$	1	0	—

Derivative formulas:

1. $\frac{d}{dx}\tan x = \sec^2 x$
2. $\frac{d}{dx}\sec x = \sec x\,\tan x$
3. $\frac{d}{dx}\sin^{-1} x = \frac{1}{\sqrt{1-x^2}}$
4. $\frac{d}{dx}\tan^{-1} x = \frac{1}{1+x^2}$
5. $\frac{d}{dx}\sec^{-1} x = \frac{1}{|x|\sqrt{x^2-1}}$
6. $\frac{d}{dx}\ln x = \frac{1}{x}$

Trig facts:

1. $\sec^2\theta = \tan^2\theta + 1$
2. $\sin(x+y) = \sin(x)\cos(y) + \cos(x)\sin(y)$
3. $\cos(x+y) = \cos(x)\cos(y) - \sin(x)\sin(y)$
4. $\sin^2 x = \frac{1}{2}(1-\cos 2x)$
5. $\cos^2 x = \frac{1}{2}(1+\cos 2x)$

Integral formulas:

1. $\int \frac{du}{\sqrt{1-u^2}} = \sin^{-1} u + C$
2. $\int \frac{du}{1+u^2} = \tan^{-1} u + C$
3. $\int \sec(u)\,du = \ln|\sec(u)+\tan(u)| + C$
4. $\int u\,dv = uv - \int v\,du$

Trial functions for Undetermined Coefficients:

For a term in $f(x)$ which is a multiple of	If	Then use a term like
$\sin(kx)$ or $\cos(kx)$	ki is not a root of the characteristic equation ki is a root of the characteristic equation	$A\cos(kx) + B\sin(kx)$ $Ax\cos(kx) + Bx\sin(kx)$
e^{nx}	n is not a root of the characteristic equation n is a single root of the characteristic equation n is a double root of the characteristic equation	Ce^{nx} $Cx\,e^{nx}$ $Cx^2\,e^{nx}$
A polynomial $ax^2 + bx + c$ of degree at most 2	0 is not a root of the characteristic equation 0 is a single root of the characteristic equation 0 is a double root of the characteristic equation	a polynomial $Dx^2 + Ex + F$ of the same degree as $ax^2 + bx + c$ a polynomial $Dx^3 + Ex^2 + Fx$ of degree one more a polynomial $Dx^4 + Ex^3 + Fx^2$ of degree two more