Trig Identity Table

$e^{\pm j\theta} = \cos(\theta) \pm j\sin(\theta)$
$\cos(\theta) = \dfrac{e^{j\theta} + e^{-j\theta}}{2}$
$\sin(\theta) = \dfrac{e^{j\theta} - e^{-j\theta}}{2j}$
$\cos(\theta \pm \pi/2) = \mp\sin(\theta)$
$\sin(\theta \pm \pi/2) = \pm\cos(\theta)$
$2\sin(\theta)\cos(\theta) = \sin(2\theta)$
$\sin^2(\theta) + \cos^2(\theta) = 1$
$\cos^2(\theta) - \sin^2(\theta) = \cos(2\theta)$
$\cos^2(\theta) = \frac{1}{2}\left[1 + \cos(2\theta)\right]$
$\sin^2(\theta) = \frac{1}{2}\left[1 - \cos(2\theta)\right]$
$\cos^3(\theta) = \frac{1}{4}\left[3\cos(\theta) + \cos(3\theta)\right]$
$\sin^3(\theta) = \frac{1}{4}\left[3\sin(\theta) - \sin(3\theta)\right]$
$\sin(A \pm B) = \sin(A)\cos(B) \pm \cos(A)\sin(B)$
$\cos(A \pm B) = \cos(A)\cos(B) \mp \sin(A)\sin(B)$
$\sin(A)\sin(B) = \frac{1}{2}\left[\cos(A - B) - \cos(A + B)\right]$
$\cos(A)\cos(B) = \frac{1}{2}\left[\cos(A - B) + \cos(A + B)\right]$
$\sin(A)\cos(B) = \frac{1}{2}\left[\sin(A - B) + \sin(A + B)\right]$
$a\cos(\theta) + b\sin(\theta) = C\cos(\theta + \phi)$ $C = \sqrt{a^2 + b^2} \quad \phi = \tan^{-1}(-b/a)$

Integral Table

$\int udv = uv - \int vdu$
$\int f(x)\dot{g}(x)dx = f(x)g(x) - \int \dot{f}(x)g(x)dx$
$\int \sin(ax)dx = -\frac{1}{a}\cos(ax)$
$\int \cos(ax)dx = \frac{1}{a}\sin(ax)$
$\int \sin^2(ax)dx = \frac{x}{2} - \frac{1}{4a}\sin(2ax)$
$\int \cos^2(ax)dx = \frac{x}{2} - \frac{1}{4a}\sin(2ax)$
$\int x\sin(ax)dx = \frac{1}{a^2}\left[\sin(ax) - ax\cos(ax)\right]$
$\int x\cos(ax)dx = \frac{1}{a^2}\left[\cos(ax) + ax\sin(ax)\right]$
$\int x^2\sin(ax)dx = \frac{1}{a^3}\left[2ax\sin(ax) + 2\cos(ax) - a^2x^2\cos(ax)\right]$
$\int x^2\cos(ax)dx = \frac{1}{a^3}\left[2ax\cos(ax) - 2\sin(ax) + a^2x^2\sin(ax)\right]$
$\int \sin(ax)\sin(bx)dx = \frac{1}{2(a-b)}\sin\left((a-b)x\right) - \frac{1}{2(a+b)}\sin\left((a+b)x\right)$ $a^2 \neq b^2$
$\int \sin(ax)\cos(bx)dx = -\frac{1}{2(a-b)}\cos\left((a-b)x\right) - \frac{1}{2(a+b)}\cos\left((a+b)x\right)$ $a^2 \neq b^2$
$\int \cos(ax)\cos(bx)dx = \frac{1}{2(a-b)}\sin\left((a-b)x\right) + \frac{1}{2(a+b)}\sin\left((a+b)x\right)$ $a^2 \neq b^2$
$\int e^{ax}dx = \frac{1}{a}e^{ax}$
$\int xe^{ax}dx = \frac{1}{a^2}e^{ax}\left(ax-1\right)$
$\int x^2e^{ax}dx = \frac{1}{a^3}e^{ax}\left(a^2x^2 - 2ax + 2\right)$
$\int e^{ax}\sin(bx)dx = \frac{1}{a^2+b^2}e^{ax}\left(a\sin(bx) - b\cos(bx)\right)$
$\int e^{ax}\cos(bx)dx = \frac{1}{a^2+b^2}e^{ax}\left(a\cos(bx) + b\sin(bx)\right)$