$\mathbf{A}\times(\mathbf{B}\times\mathbf{C}) = (\mathbf{A}\cdot\mathbf{C})\mathbf{B} - (\mathbf{A}\cdot\mathbf{B})\mathbf{C}$; $\nabla\times(\nabla\times\mathbf{F}) = \nabla(\nabla\cdot\mathbf{F}) - \nabla^2\mathbf{F}$

Potentials: $\nabla\times\mathbf{F} = 0$ iff $\mathbf{F} = \nabla\psi$; $\nabla\cdot\mathbf{F} = 0$ *iff* $\mathbf{F} = \nabla\times\mathbf{G}$

Grad: $\int_P^Q \nabla\psi\cdot d\mathbf{R} = \psi(Q)-\psi(P)$

Div: $\iiint_D \nabla\cdot\mathbf{F}\,dV = \iint_S \mathbf{F}\cdot\mathbf{n}\,dS$

Curl: $\iint_S \nabla\times\mathbf{F}\cdot\mathbf{n}\,dS = \int_C \mathbf{F}\cdot d\mathbf{R}$

$$\nabla^2\psi = \frac{1}{\rho}\frac{\partial}{\partial\rho}\left(\rho\frac{\partial\psi}{\partial\rho}\right) + \frac{1}{\rho^2}\frac{\partial^2\psi}{\partial\theta^2} + \frac{\partial^2\psi}{\partial z^2}$$

$$\nabla^2\psi = \frac{1}{r^2}\frac{\partial}{\partial r}\left(r^2\frac{\partial\psi}{\partial r}\right) + \frac{1}{r^2\sin\phi}\frac{\partial}{\partial\phi}\left(\sin\phi\frac{\partial\psi}{\partial\phi}\right) + \frac{1}{r^2\sin^2\phi}\frac{\partial^2\psi}{\partial\theta^2}$$

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$e^{j\theta} = \cos\theta + j\sin\theta$ $\quad \cos\theta = (e^{j\theta}+e^{-j\theta})/2$ $\quad \sin\theta = (e^{j\theta}-e^{-j\theta})/2j$

$\cosh\theta = (e^{\theta}+e^{-\theta})/2$ $\quad \sinh\theta = (e^{\theta}-e^{-\theta})/2$ $\quad \sin j\theta = j\sinh\theta$

$\cos j\theta = \cosh\theta$ $\quad \cos^2\theta + \sin^2\theta = \cosh^2\theta - \sinh^2\theta = 1$

$\sin(\theta\pm\phi) = \sin\theta\cos\phi \pm \cos\theta\sin\phi$

$\cos(\theta\pm\phi) = \cos\theta\cos\phi \mp \sin\theta\sin\phi$

$\sin\theta + \sin\phi = 2\sin\tfrac{1}{2}(\theta+\phi)\cos\tfrac{1}{2}(\theta-\phi)$

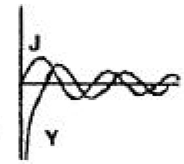
$\sin\theta - \sin\phi = 2\cos\tfrac{1}{2}(\theta+\phi)\sin\tfrac{1}{2}(\theta-\phi)$

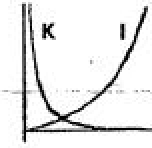
$\cos\theta + \cos\phi = 2\cos\tfrac{1}{2}(\theta+\phi)\cos\tfrac{1}{2}(\theta-\phi)$

$\cos\theta - \cos\phi = -2\sin\tfrac{1}{2}(\theta+\phi)\sin\tfrac{1}{2}(\theta-\phi)$

$\sin\theta\sin\phi = \tfrac{1}{2}\cos(\theta-\phi) - \tfrac{1}{2}\cos(\theta+\phi)$

$\cos\theta\cos\phi = \tfrac{1}{2}\cos(\theta-\phi) + \tfrac{1}{2}\cos(\theta+\phi)$





$\sin\theta\cos\phi = \tfrac{1}{2}\sin(\theta-\phi) + \tfrac{1}{2}\sin(\theta+\phi)$

$\sinh(\theta\pm\phi) = \sinh\theta\cosh\phi \pm \cosh\theta\sinh\phi$

$\cosh(\theta\pm\phi) = \cosh\theta\cosh\phi \pm \sinh\theta\sinh\phi$

$(\sin^{-1}x)' = -(\cos^{-1}x)' = (1-x^2)^{-1/2}$ $\quad (\tan x)' = \sec^2 x$

$\int dx/(ax^2+bx+c) = 2\,(4ac-b^2)^{-1/2}\tan^{-1}(2ax+b)(4ac-b^2)^{-1/2}$

$\int dx/(ax^2+bx+c)^{1/2} = -(-a)^{-1/2}\sin^{-1}(2ax+b)(b^2-4ac)^{-1/2}$

$\tan^{-1} jx = j\tanh^{-1} x = \tfrac{1}{2}\, j \ln (1+x)/(1-x)$ $\quad a^x = e^{x\ln a}$

$\sin^{-1} jx = j\sinh^{-1} x = \ln[x+(x^2+1)^{1/2}]$ $\quad \log_b c = \log_a c / \log_a b$

$1/(1-x) = 1+x+x^2+\ldots$ $\quad e^x = 1+x+x^2/2!+x^3/3!+\ldots$

$\sin x = x-x^3/3!+x^5/5!-\ldots$ $\quad \cos x = 1-x^2/2!+x^4/4!-\ldots$

$y'' - [(2a-1)/x]y' + [b^2c^2x^{2c-2}+(a^2-n^2c^2)/x^2]y = 0$; $y=x^aJ_n(bx^c)$