$$\int xb^x\,dx = b^x\left(\frac{x}{ln(b)} - \frac{1}{(ln(b))^2}\right) + C,\ b > 1\ ,\ x\ \in \Re$$

$$\int x^n cos(x)\,dx = x^n sin(x) - n\left(\int x^{n-1} sin(x)\,dx\right),\ n\ and\ x\ \in \Re$$

$$\int x^n sin(x)\,dx = -x^n cos(x) + \int nx^{(n-1)} cos(x)\,dx,\ n\ and\ x\ \in \Re$$

$$\int x^n e^{-x} dx = -x^n e^{-x} + n\left(\int x^{(n-1)} e^{-x}\,dx\right),\ n\ and\ x\ \in \Re$$

$$\int cos^n(x)\,dx = \frac{1}{n}\,cos^{(n-1)}(x)sin(x) + \frac{n-1}{n}\left(\int cos^{(n-2)}(x)\,dx\right),\ n\ and\ x\ \in \Re$$

$$\int sin^n(x)\,dx = \frac{1}{n}\left(-cos(x)sin^{(n-1)}(x) + (n-1)\int sin^{(n-2)}(x)\,dx\right), n\ \ x\ \in \Re$$

$$\int sec^n(x)\,dx = \frac{1}{n-1}\left(\ tan(x)sec^{(n-2)}(x) + (n-2)\int sec^{(n-2)}(x)\,dx\right),\ n\ x\ \in \Re$$

$$\int csc^n(x)\,dx = \frac{1}{n-1}\left(-cot(x)csc^{(n-2)}(x) + (n-2)\int csc^{(n-2)}(x)\,dx\right),\ n\ x\ \in \Re$$

$$\int sin(mx)sin(nx)\,dx = \frac{mcos(mx)sin(nx) - ncos(nx)sin(mx)}{n^2-m^2} + C,\ m\ n\ and\ x\ \in \Re$$

$$\int sin(mx)cos(nx)\,dx = \frac{nsin(mx)sin(nx) + mcos(nx)cos(mx)}{n^2-m^2} + C, m\ n\ and\ x\ \in \Re$$

$$\int cos(mx)cos(nx)\,dx = \frac{cos(mx)sin(nx)}{n} + \frac{m}{n}\left(\frac{mcos(mx)sin(nx) - ncos(nx)sin(mx)}{n^2-m^2}\right) + C$$

$$\int e^{bx} sin(kx)\,dx = \frac{e^{bx}}{b^2+k^2}\left(\frac{bsin(kx) - kcos(kx)}{1}\right) + C,\ b\ k\ and\ x\ \in \Re$$

$$\int e^{bx} cos(kx)\, dx = \frac{e^{bx}}{b^2+k^2}\left(\frac{bcos(kx) + ksin(kx)}{1}\right) + C,\ b\ k\ and\ x \in \Re$$

$$i^i = e^{\frac{-\pi}{2} - 2\pi n},\ n \in integers$$

$$(ki)^{\frac{a}{b}} = e^{\frac{a}{b}(ln(k) + \frac{\pi}{2} i + 2\pi n(i))},\ a\ and\ b \in integers$$

$$k(i)^{\frac{a}{b}} = k(e^{\frac{a}{b}(i)\ (\frac{\pi}{2} + 2\pi n)}),\ a\ and\ b \in integers$$

$$cos(x) = \frac{e^{ix} + e^{-ix}}{2}$$

$$sin(x) = \frac{e^{ix} - e^{-ix}}{2i}$$

$$z = a + bi,\ z \in complex$$

$$z = rcos(\theta) + irsin(\theta)$$

$$z = re^{i\theta}$$

$$ln(z) = ln(r) + i\theta$$

$$a^{bi + c} = a^{bi} * a^c = a^c\ (cos(bln(a)) + i\ sin(bln(a))\ )$$

$$e^{ix} = cos(x) + i\ sin(x)$$