


Formas Algebraicas Diversas en Calculo

$$\int u(au + b)^n du = \frac{u(au + b)^{n+1}}{a(n+1)} - \frac{(au + b)^{n+2}}{a^2(n+1)(n+2)} + C \quad \text{si } n \neq -1, -2$$

$$\int u(au + b)^{-1} du = \frac{u}{a} - \frac{b}{a^2} \ln|au + b| + C$$


$$\int \frac{du}{(a^2 \pm u^2)^n} = \frac{1}{2a^2(n-1)} \left(\frac{u}{(a^2 \pm u^2)^{n-1}} + (2n-3) \int \frac{du}{(a^2 \pm u^2)^{n-1}} \right) \quad \text{si } n \neq 1$$

$$\int u(au + b)^{-2} du = \frac{1}{a^2} \left[\ln|\Delta|au + b| + \frac{b}{au + b} \right] + C$$

$$\int u\sqrt{au + b} du = \frac{2}{15a^2} (3au - 2b)(au + b)^{3/2} + C$$

$$\int u^n \sqrt{au + b} du = \frac{2}{a(2n+3)} \left(u^n (au + b)^{3/2} - nb \int u^{n-1} \sqrt{au + b} du \right)$$

$$\int \frac{u du}{\sqrt{au + b}} = \frac{2}{3a^2} (au - 2b) \sqrt{au + b} + C$$

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$$\int \frac{u^n du}{\sqrt{au + b}} = \frac{2}{a(2n+1)} \left(u^n \sqrt{au + b} - nb \int \frac{u^{n-1} du}{\sqrt{au + b}} \right)$$

$$\int \frac{du}{u\sqrt{au + b}} = \frac{1}{\sqrt{b}} \ln \left| \frac{\sqrt{au + b} - \sqrt{b}}{\sqrt{au + b} + \sqrt{b}} \right| + C \quad \text{si } b > 0$$

$$\int \frac{du}{u\sqrt{au + b}} = \frac{2}{\sqrt{-b}} \tan^{-1} \sqrt{\frac{au + b}{-b}} + C \quad \text{si } b < 0$$

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$$\int \frac{du}{u^n \sqrt{au+b}} = \frac{\sqrt{au+b}}{b(n-1)u^{n-1}} - \frac{(2n-3)a}{(2n-2)b} \int \frac{du}{u^{n-1} \sqrt{au+b}} \quad \text{si } n \neq 1$$

$$\int \sqrt{2au - u^2} du = \frac{u-a}{2} \sqrt{2au - u^2} + \frac{a^2}{2} \operatorname{sen}^{-1} \frac{u-a}{a} + C$$

$$\int \frac{du}{u \sqrt{2au - u^2}} = \operatorname{sen}^{-1} \frac{u-a}{a} + C$$



$$\int u^n \sqrt{2au - u^2} du = -\frac{u^{n-1}(2au - u^2)^{3/2}}{n+2} + \frac{(2n+1)a}{n+2} \int u^{n-1} \sqrt{2au - u^2} du$$

$$\int \frac{u^n du}{\sqrt{2au - u^2}} = -\frac{u^{n-1}}{n} \sqrt{2au - u^2} + \frac{(2n-1)a}{n} \int \frac{u^{n-1} du}{\sqrt{2au - u^2}}$$

$$\int \frac{\sqrt{2au - u^2}}{u^n} du = \frac{(2au - u^2)^{3/2}}{(3-2n)au^n} + \frac{n-3}{(2n-3)a} \int \frac{\sqrt{2au - u^2}}{u^{n-1}} du$$

$$\int \frac{du}{u^n \sqrt{2au - u^2}} = \frac{\sqrt{2au - u^2}}{a(1-2n)u^n} + \frac{n-1}{(2n-1)a} \int \frac{du}{u^{n-1} \sqrt{2au - u^2}}$$

$$\int \frac{\sqrt{2au - u^2}}{u} du = \sqrt{2au - u^2} + a \operatorname{sen}^{-1} \frac{u-a}{a} + C$$

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$$\int \frac{du}{(\sqrt{2au - u^2})^n} = \frac{u-a}{(n-2)a^2} (\sqrt{2au - u^2})^{2-n} + \frac{n-3}{(n-2)a^2} \int \frac{du}{(\sqrt{2au - u^2})^{n-2}}$$

$$\int (\sqrt{2au - u^2})^n du = \frac{u-a}{n+1} (2au - u^2)^{n/2} + \frac{na^2}{n+1} \int (\sqrt{2au - u^2})^{n-2} du$$