$$\int \frac{dx}{x-a}$$

S(dx/(x-a))=S(d(x-a)/(x-a))=S(dt/t)=ln|x-a|+C
x-a=t

dx=d(x-a)=dx-da=dx-0

$$\int \frac{dx}{(x-a)^k}$$

S(dx/(x-a)^k)=S(d(x-a)/(x-a)^k)=
=S(dt/t^k)=t^(1-k)/(1-k)+C=(x-a)^(1-k)/(1-k)+C

$$\int \sin mx\, dx \qquad (m \neq 0)$$

S(sin(mx))dx=1/m*S(sin(mx))d(mx)=
=1/m*S(sin(t))d(t)=1/m(-cost)+C=
-cosmx/m+C

$$\int \cos mx\, dx$$

S(cos(mx))dx=1/mS(cos(mx)/d(mx))=
=1/mS(cost/dt)=1/m(sint)+C=
=sinmx/m+C

dx^2=2xdx
dx^2/dx=2x
(x^2)'=2x
d(x^2)/dx=2x

$$\int e^{-3x}\, dx$$

S(e^(-3x))dx=-⅓ S(e^(-3x))d(-3x)=
-⅓ S(e^(t))d(t)=-⅓ e^(-3x)+C

$$\int \frac{dx}{\sqrt{a^2-x^2}}$$

S(dx/V(a^2-x^2))=1/a*S(d(ax)/V(a^2-x^2))=
=1/a* S(d(x)/V[(a^2-x^2)/a^2]))=
=1/a* S(d(x)/V[1-(x/a)^2]))=
=a/a* S(d(x/a)/V[1-(x/a)^2]))=
=S(dt/V[1-t^2]))=arcsint+C=arcsin(x/a)+C

$$\int \frac{dx}{a^2+x^2}$$

S(dx/(a^2+x^2))=1/a^2*S(d(a^2x)/(a^2+x^2))=
=1/a^2*S(d(x)/(a^2+x^2)/a^2)=
=1/a^2* S(d(x)/(1+(x/a)^2))=
=a/a^2* S(d(x/a)/(1+(x/a)^2))=
=1/a * S(dt/(1+t^2))=
=1/a * arctg(t)+C=1/a * arctg(x/a)+C

$$\int \frac{(e^x-1)(e^{2x}+1)}{e^x}\, dx$$

S()