(a) $\displaystyle\int \frac{dx}{\sin x}$ (б) $\displaystyle\int \frac{dx}{\cos x}$

S(dx/sinx)=S(dx/2sin(x/2)cos(x/2))=
S(dx/cos^2(x/2) / 2sin(x/2)cos(x/2)/cos^2(x/2))=
=S(2d(x/2)/cos^2(x/2) / 2sin(x/2)cos(x/2)/cos^2(x/2))=
=S(d(x/2)/cos^2(x/2) / sin(x/2)cos(x/2)/cos^2(x/2))=
S(d(tg(x/2)) / sin(x/2)/cos(x/2))=
S(d(tg(x/2)) / tg(x/2))=[t=tg(x/2)]=S(d(t) / t)=ln|t|+C=ln|tgx/2|+C

(1+tg(x/2))/(1-tg(x/2))

S(1/(1-t))dt = -S(1/(1-t))d(-t)
=-S(1/(1-t))d(1-t)=[1-t=y] =
-S(1/(y)dy=-ln|y|=-ln|1-t|

S(dx/cosx)=S(dx/(cos^2(x/2)-sin^2(x/2)))=
S(dx/cos^2(x/2)/(cos^2(x/2)-sin^2(x/2))/cos^2(x/2))=
S(2d(tg(x/2))/(1-tg^2(x/2)))=[t=tg(x/2)]=2S(d(t)/(1-t^2))

1/(1-t^2)= A/(1-t) + B/(1+t)= (A(1+t) + B(1-t))/(1-t)(1+t)=
=(A+At + B-Bt)/(1-t)(1+t)=((A+B)+t(A-B))/(1-t)(1+t)

(A-B)=0
(A+B)=1
A=B
2B=1
B=A=½

2S(1/2(1-t) + 1/2(1+t))=S(1/(1-t) + 1/(1+t))dt=
=S(1/(1-t))dt + S(1/(1+t))dt=
-ln|1-t| + ln|1+t|+C=-ln|1-tg(x/2)| + ln|1+tg(x/2)|+C=
=ln|1+tg(x/2)|/|1-tg(x/2)| +C =ln|(1+tg(x/2))/(1-tg(x/2))| +C

S(dx/cosx)=S(dx/sin(x+P/2))=
=S(d(x+P/2)/sin(x+P/2))=
=[(x+P/2)=u]=Sdu/sin(u)=
ln|tgu/2|+C=ln|tg(x+P/2)/2|+C=
=ln|tg(x/2+P/4)|+C

sin(x+P/2)=sinx cosP/2+cosx
sinP/2=cosx

tg(x/2+P/4)=sin(x/2+P/4)/
/cos(x/2+P/4)=
=[sinx/2cosP/4+cosx/2sinP/4]/
/[cosx/2cosP/4-sinx/2sinP/4]=
=V2/2[sinx/2+cosx/2]/
/V2/2[cosx/2-sinx/2]=
=[sinx/2+cosx/2]/[cosx/2-sinx/2]=
=[sinx/2+cosx/2]/cosx/2
/[cosx/2-sinx/2]/cosx/2=
=[tgx/2+1]/[1-tgx/2]