(а) $\int \frac{\cos x\, dx}{1+\sin^2 x}$

(б) $\int \operatorname{tg} x\; dx$

(в) $\int \frac{dx}{A^2 \sin^2 x + B^2 \cos^2 x}$

S(cosxdx/(1+sin^2x))=S(d(sinx))/(1+sin^2x))=
=[t=sinx]=S(d(t))/(1+t^2))=arctgt+C=arctg(sinx)+C

S(tgx)dx=S(sinx/cosx)dx=S(1/cosx)d(-cosx)=
=[t=cosx]=-S(1/t)d(t)=-ln|t|+C=-ln|cosx|+C

S(dx/(A^2sin^2x+B^2cos^2x))=
S(dx/cos^2x/(A^2sin^2x+B^2cos^2x)/cos^2x)=
S(dx/cos^2x/(A^2tg^2x+B^2))=
S(d(tgx)/(A^2tg^2x+B^2))=[t=tgx]=
S(d(t)/(A^2t^2+B^2))=S(d(t)/B^2/(A^2t^2+B^2)/B^2)=
S(d(t)/B^2/(A^2t^2/B^2+1))=
=B/A*S(d(At/B)/B^2/(A^2t^2/B^2+1))=
[y=At/B]=1/AB*S(d(y)/(y^2+1))=
1/AB arctgy+C=1/AB arctg(At/B)+C=1/AB arctg(Atgx/B)+C