(а) $\int \frac{2x\,dx}{x^2+1}$, (б) $\int \operatorname{ctg} x\,dx$,

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

S(2xdx/x^2+1)=Sd(x^2+1)/(x^2+1)=[t=x^2+1]=
Sd(t)/(t)=ln|t|+C=ln|x^2+1|+C=ln(x^2+1)+C

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

S(e^2x/(e^2x+1))dx=1/2S(d(e^2x)/(e^2x+1))=
1/2S(d(e^2x+1)/(e^2x+1))=[t=e^2x+1]=
1/2S(d(t)/(t))=1/2ln(e^2x+1)+C

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