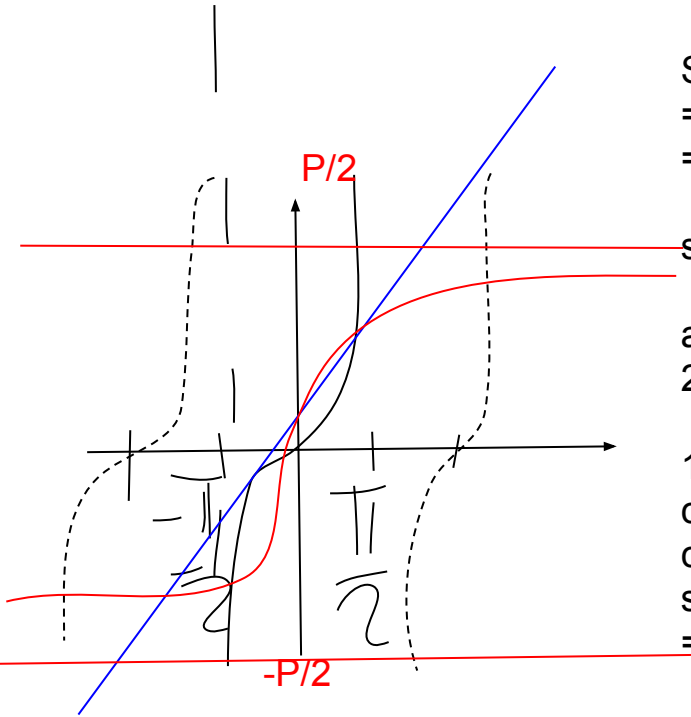
$$\int \frac{dx}{(x^2+a^2)^2}$$

S(dx/(x^2+a^2)^2)=S(dx/(x^2+a^2)^2)

x=a*tg(t) => tgt=x/a=>t=arctg(x/a)
dx=a*d(tgt)=a*dt/cos^2 t
x^2+a^2=a^2*tg^2(t) + a^2=a^2(tg^2(t)+1)=a^2(tg^2(t)+1)=a^2/cos^2 t=
S(a*dt/cos^2 t/(a^2/cos^2 t)^2)=S(a*dt*cos^2 t/(a^4))=
1/a^3S(dt*cos^2 t)=1/a^3(t/2+sin2t/4)+C=
=1/a^3(arctg(x/a)/2+sin2arctg(x/a)/4)+C=1/a^3(arctg(x/a)/2+-2ax/4a^3(a^2+x^2)+C=
=1/a^3(arctg(x/a)/2+-x/[2a^2(a^2+x^2)]+C



S(cos^2(mx))dx=S((1+cos2mx)/2)dx=S(1/2)dx+S(cos2mx/2)dx=
=x/2+½S(cos2mx)dx=x/2+½S(cos2mx/2m)d(2mx)=
=x/2+sin2mx/4m+C

sin2arctg(x/a)=sin2u=2sinucosu=+-2a/V(x^2+a^2)*x/V(a^2+x^2))=+-2ax/(a^2+x^2)

arctg(x/a)=u э (-P/2;P/2) =>cosu>0 x/a=tgu
2u э (-P;P)

1+tg^2u=1/cos^2u
cos^2u=1/(1+tg^2u)
cosu=+-1/V(1+tg^2u)=+1/V(1+tg^2u)=+1/V(1+(x/a)^2)=a/V(x^2+a^2)
sinu=+-V(1-cos^2u)=+-V(1-1/(1+(x/a)^2))=+-V([(1+(x/a)^2)-1]/(1+(x/a)^2))=
=+-V((x/a)^2/(1+(x/a)^2))=+-V(x^2/(a^2+x^2))=+-x/V(a^2+x^2))