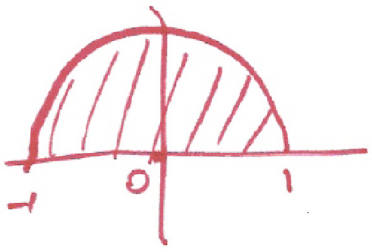
Problem 7. (10 pts) Evaluate by changing to polar coordinates

$$\int_{-1}^{1}\int_{0}^{\sqrt{1-x^2}} \frac{1}{1+x^2+y^2}dydx$$

$$= \int_0^{\pi}\int_0^1 \frac{1}{1+r^2}\, r\,dr\,d\theta$$



$$= \pi \cdot \frac{1}{2}\ln(1+r^2)\Big|_0^1$$

$$= \boxed{\pi\,\frac{\ln 2}{2}.}$$