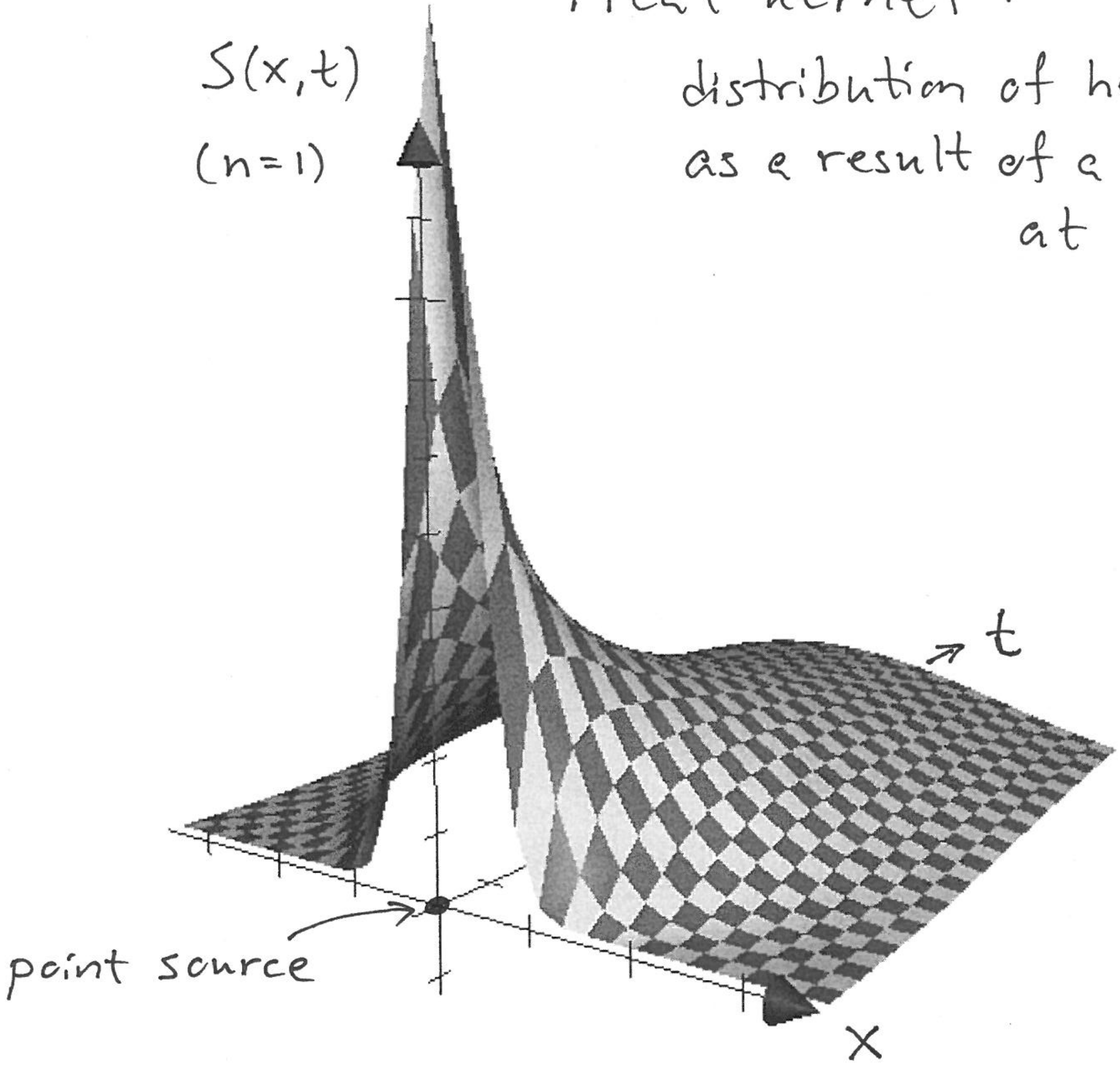
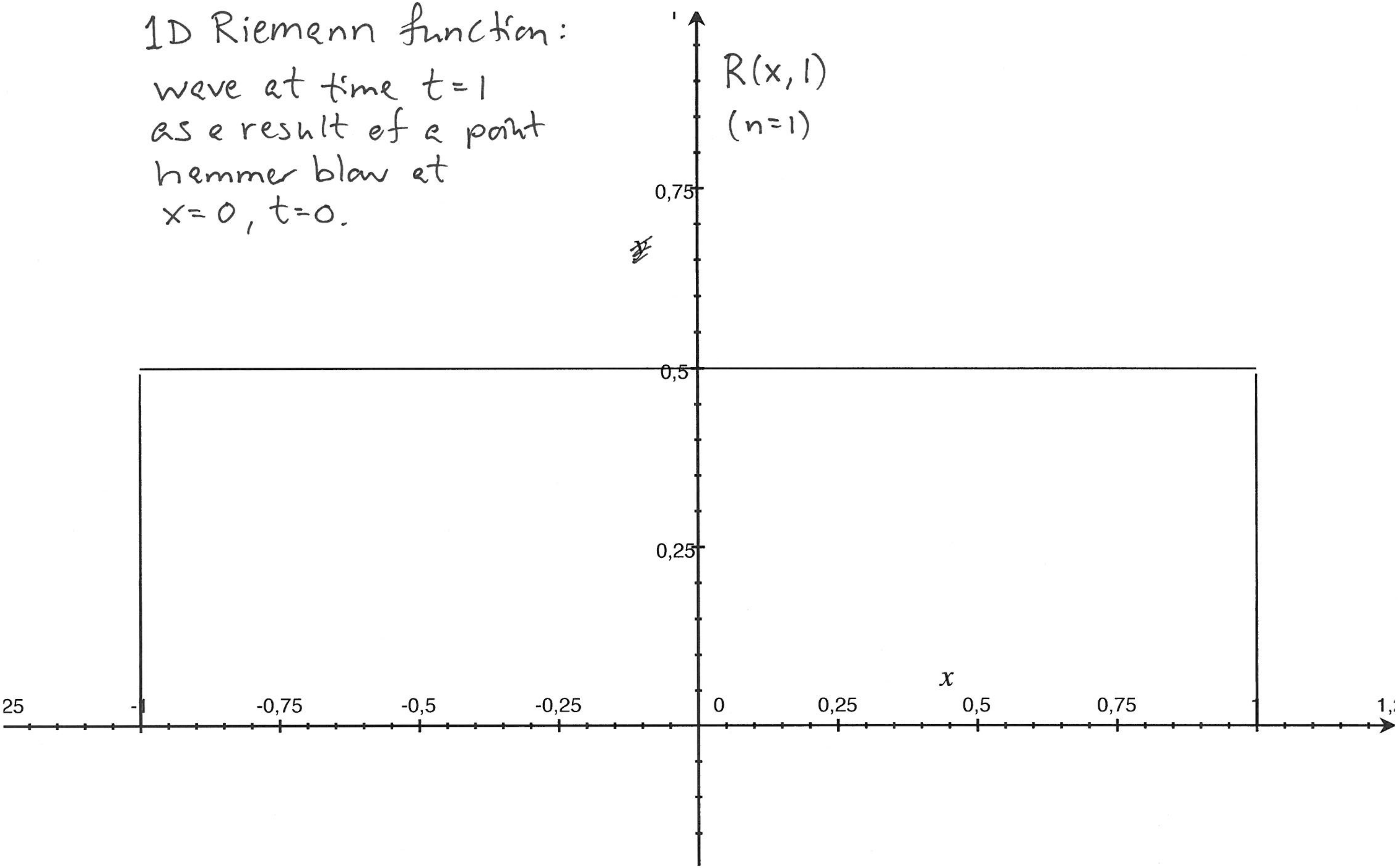
Heat kernel:

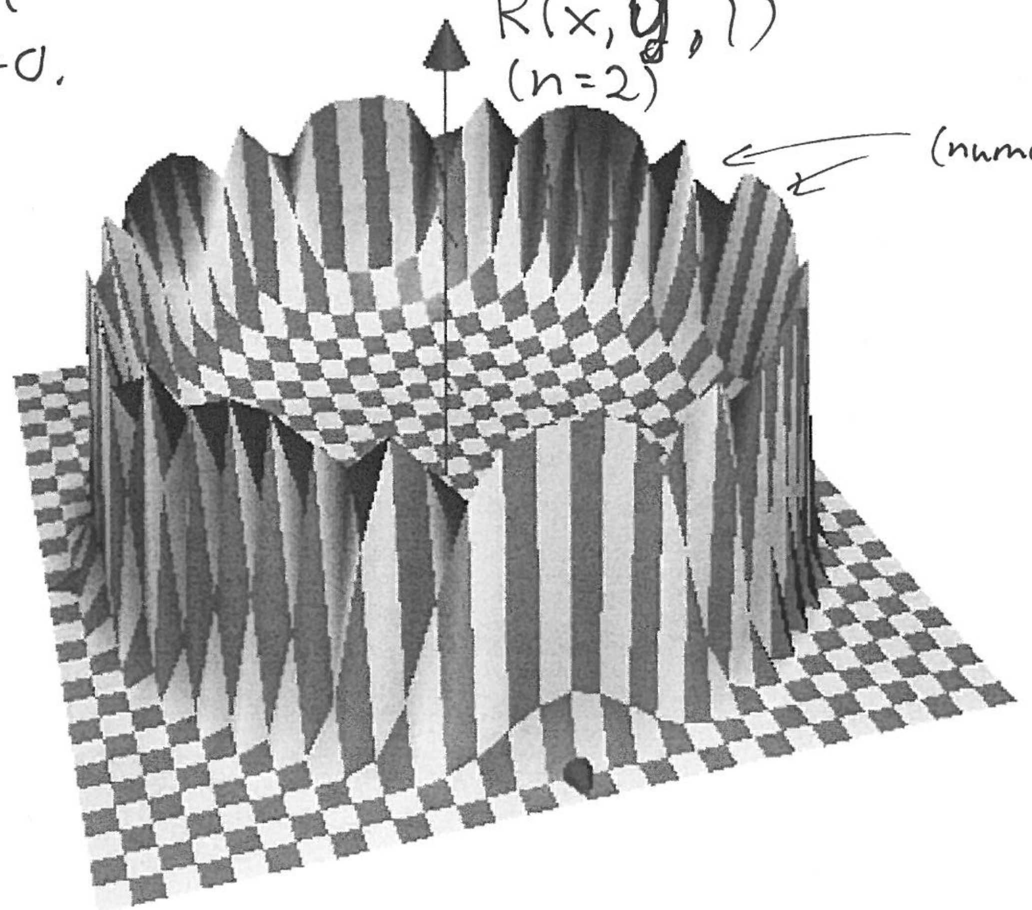
distribution of heat / mass as a result of a point source at $x=0$, $t=0$.



1D Riemann function:
wave at time $t=1$
as a result of a point
hammer blow at
$x=0$, $t=0$.

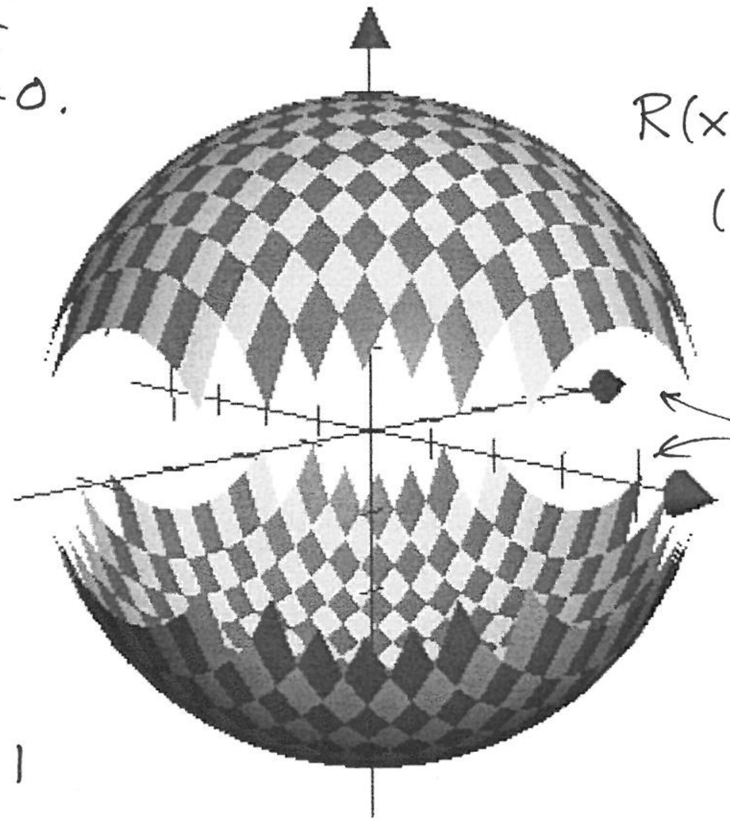


2D Riemann function:
wave at time $t=1$
as a result of a point
hammer blow at
$(x,y)=(0,0)$, $t=0$.

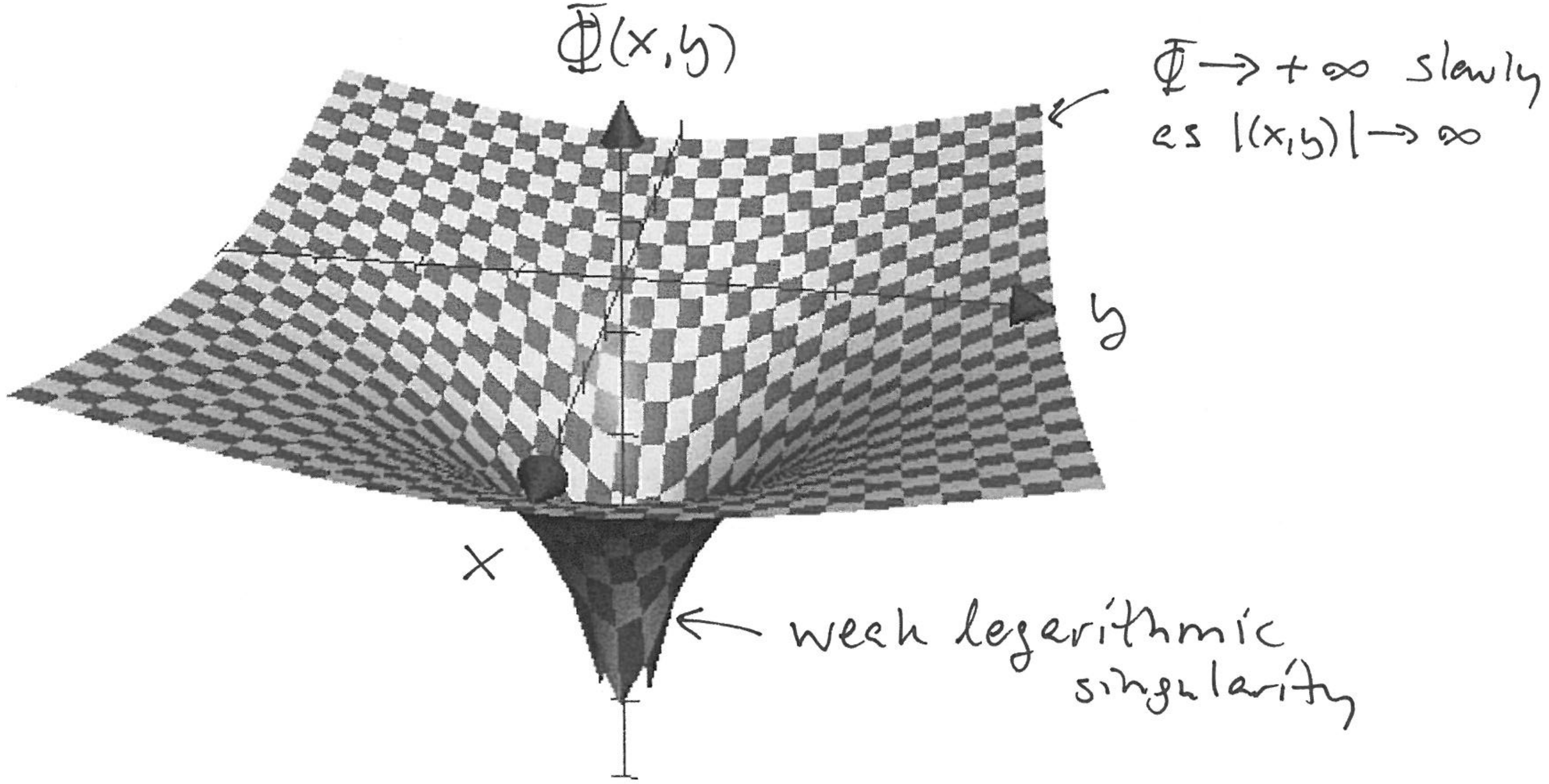


3D Riemann function:

wave at time $t=1$
as a result of a point
hammer blow at
$(x,y,z)=(0,0,0)$, $t=0$.

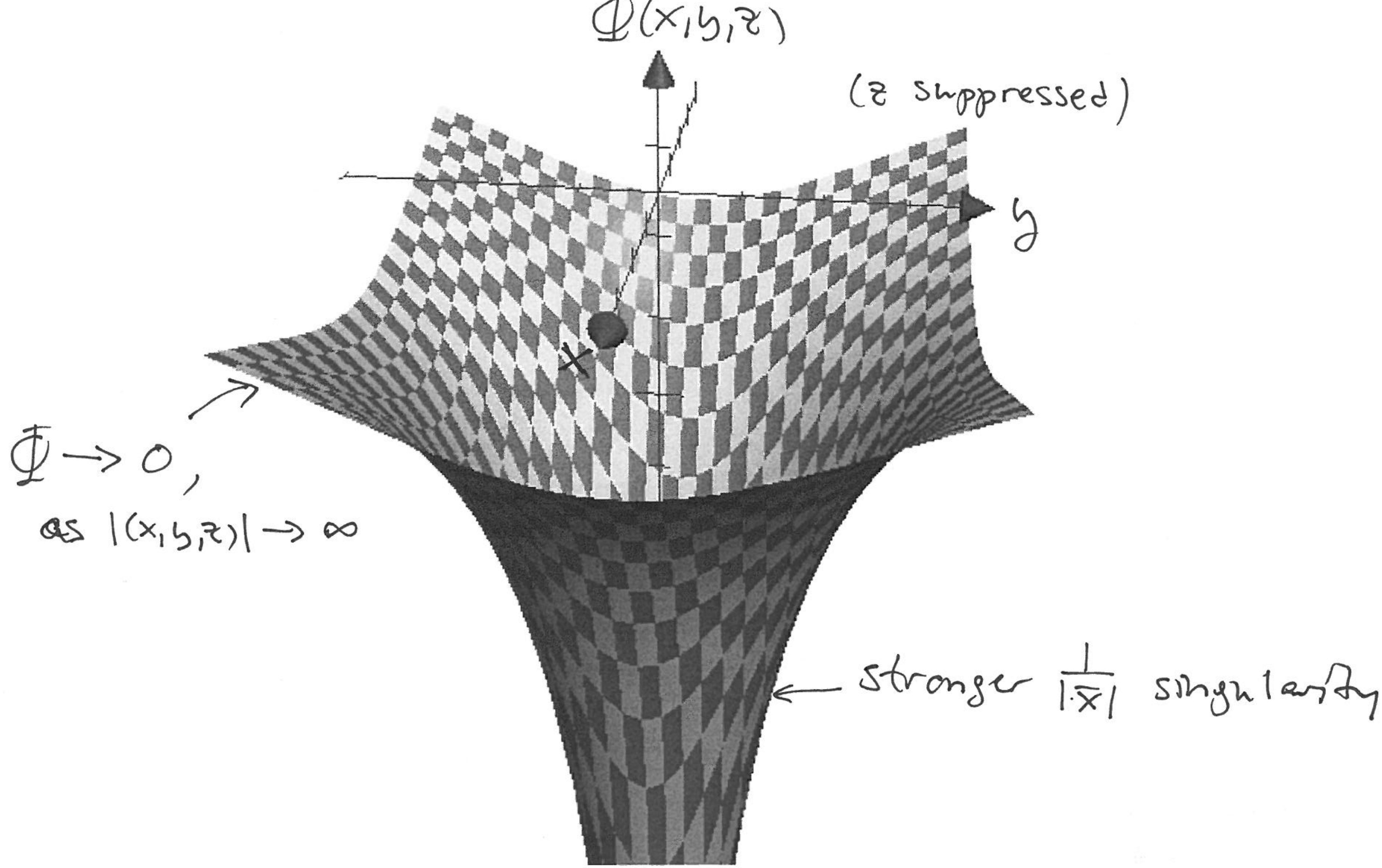


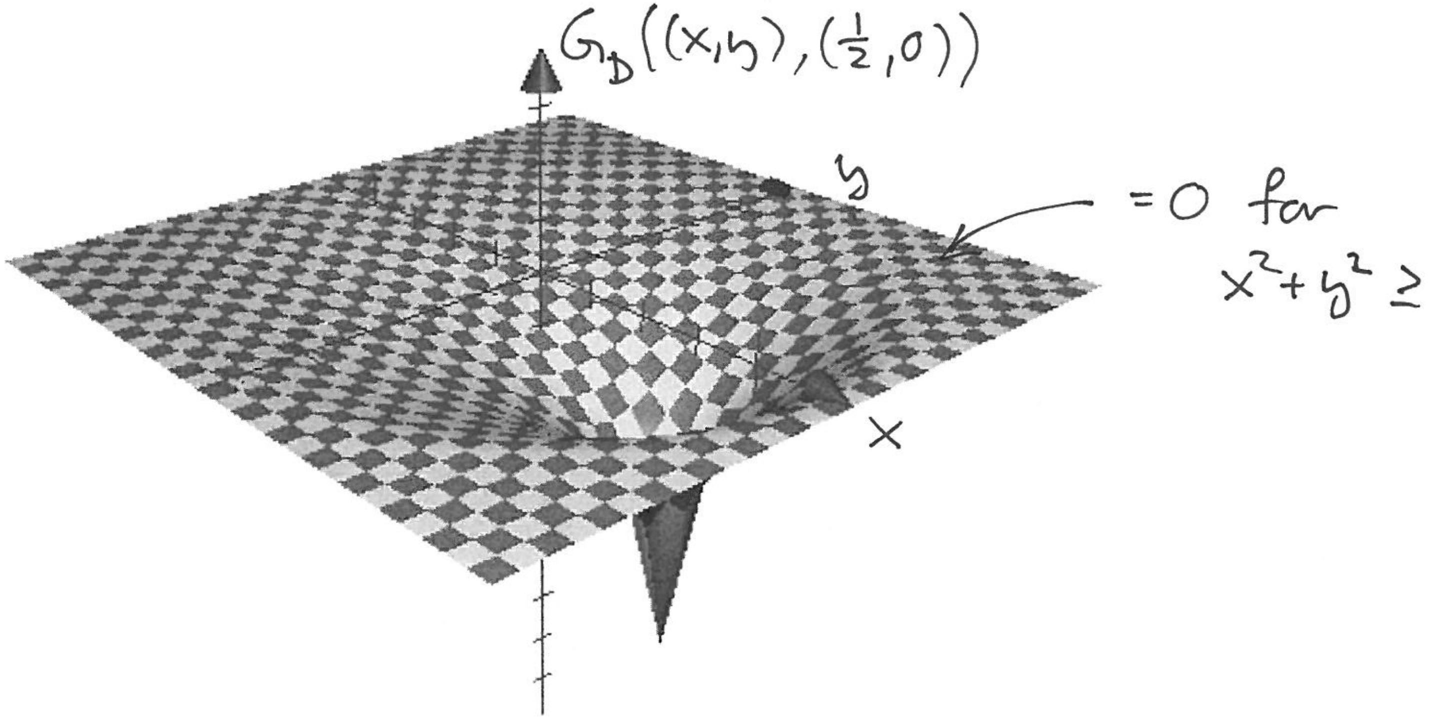
$$R=\begin{cases} \infty \; ; & x^2+y^2+z^2=1 \\ 0 \; ; & x^2+y^2+z^2\neq 1 \end{cases}$$



2D fundamental solution for Δ :
potential from point source at $(x,y)=(0,0)$

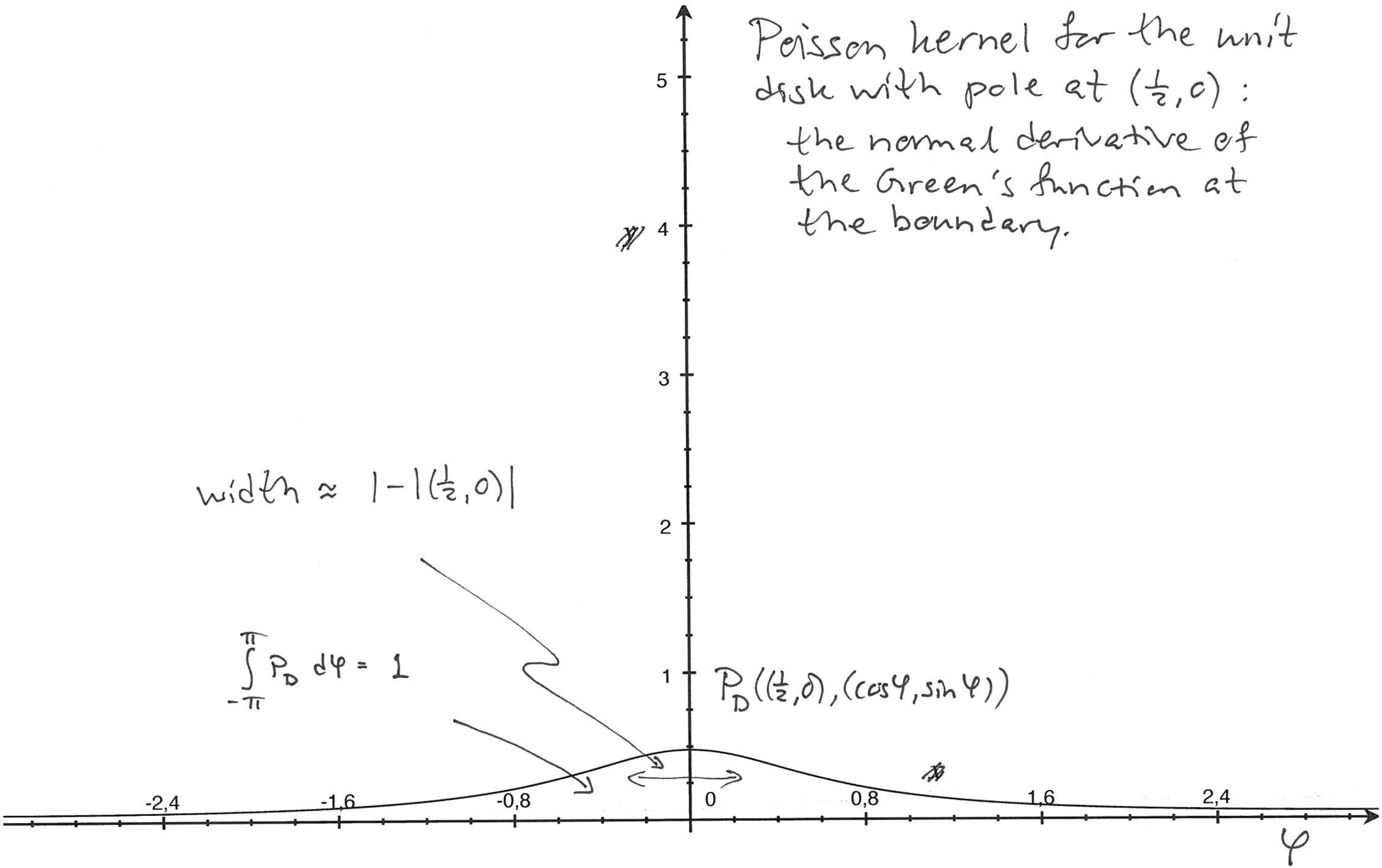
3D fundamental solution for Δ :
potential from point source at $(x,y,z) = (0,0,0)$.

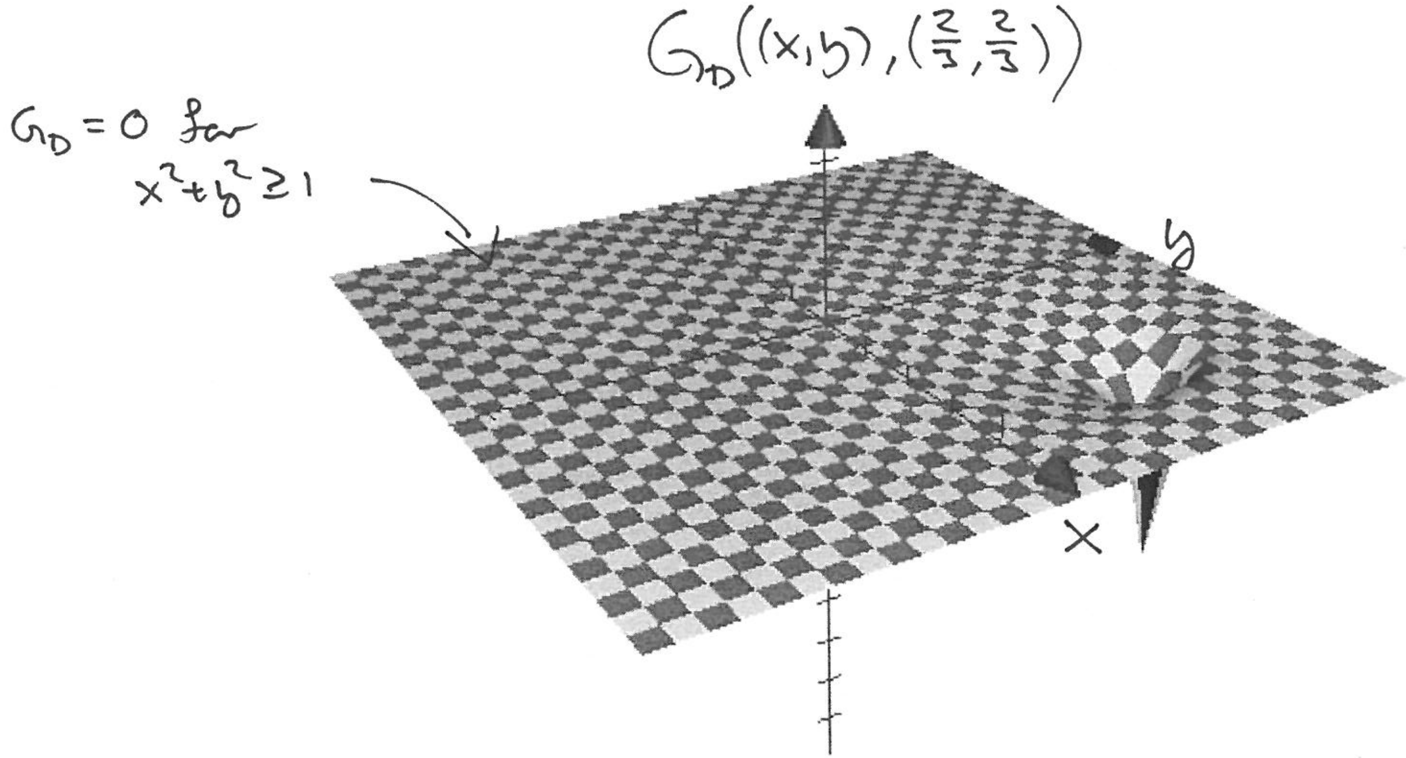




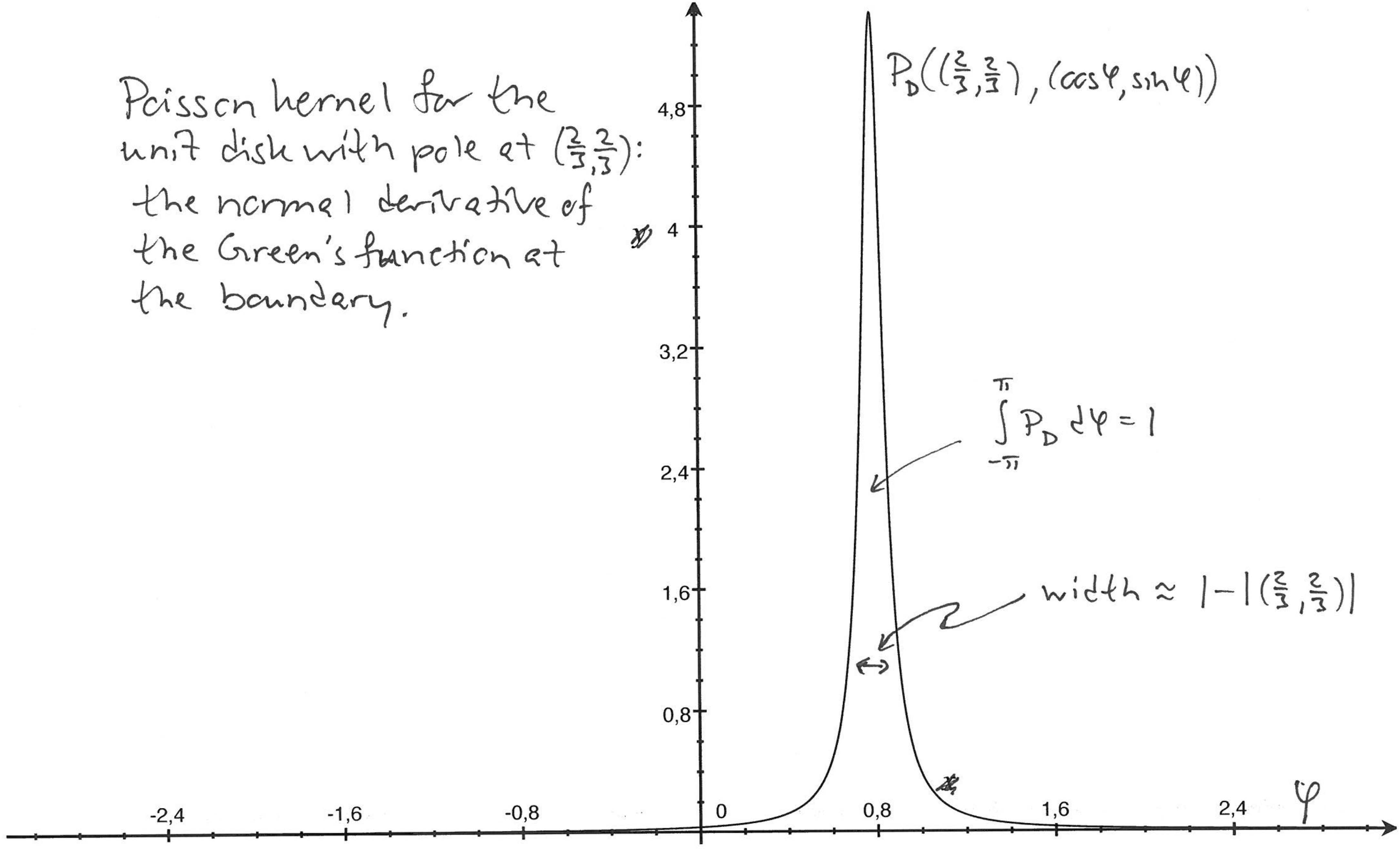
Green's function for the unit disk with pole at $(\frac{1}{2},0)$: potential from point source at $(\frac{1}{2},0)$, with the unit circle conducting and grounded.

Poisson kernel for the unit disk with pole at $(\frac{1}{2}, 0)$:
the normal derivative of the Green's function at the boundary.





Green's function for the unit disk with pole at $(\frac{2}{3},\frac{2}{3})$: potential from point source at $(\frac{2}{3},\frac{2}{3})$, with the unit circle conducting and grounded.



Poisson kernel for the unit disk with pole at $(\frac{2}{3},\frac{2}{3})$: the normal derivative of the Green's function at the boundary.