Let Girys be The Green function for Blois. We observe That a) 6 (x,y) 20 for x, y = B(o,i). Indeed fixed & G(x,y) is harmonic on y on  $B(0,1) \setminus B(x, \epsilon)$ for every  $\epsilon$ . Moreover G(x,y) = 0 for y & 0 B(0,1) and G(x,y) >0 on for y & d B(z, E) for E small enough. b) dy G(x,y) = K(x,y) ->0 (from explict formula). | | | (x) = | G(x,y) fy) dy | + | ] = G(x,y) g (y) dy |
B(0,1) E sup | f (y) | S (x,y) oly + sup of (y) (d) G (x,y) olsy)

B(0,1)

B(0,1)

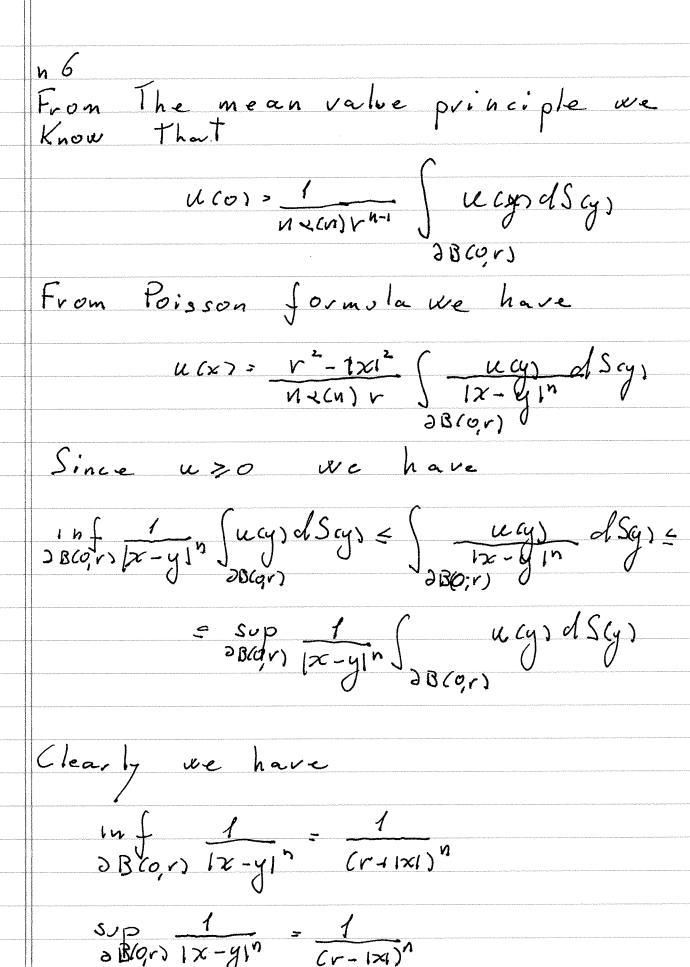
$$\begin{cases} -\Delta h = 1 & \text{on } B(0,1) \implies h = -|x|^2 + 1 \\ h = 0 & \text{on } \partial B(0,1) \end{cases}$$

while

$$-\Delta \ell = 0 \quad \text{on } B(0,1) \Rightarrow \ell(\infty) = 1$$

$$h = 2 \quad \text{on } \partial B(0,1)$$

We get



Putting Together we get

$$u(x) \leq \frac{r^2 - |x|^2}{n \, d \, cn} \int \frac{u \, cy}{|x - y|^n} \, dS(y) \leq \frac{1}{2} B(0, r)$$

$$\leq \frac{v^{n-2}(v^2+\chi i^2)}{(v-1)^{2}} \frac{1}{n + (n) + (n-1)} \left( \frac{(\log i) + \log i}{\log i} \right) = \frac{1}{28(o,r)}$$

$$= r^{N-2} \frac{r+1x!}{(r-1x!)^{N-1}} \quad (0)$$

and similarly for The opposite
inequality

Since u(x)=0 when  $x_h=0$  we have That  $v(x) \in C^{\circ}(\beta(0,1))$ . Observe That from The definition we have  $\lim_{h\to 0^+} \frac{v(x_1, x_{n-1}, h)}{h} = \lim_{h\to 0^-} \frac{v(x_1, x_{n-1}, h)}{h}$ so that v & C'(B(0,1)). Finally By a similar argument we get That  $\frac{\partial_{x_i}}{\partial x_i} \frac{\partial_{x_i}}{\partial x_i} v(x)$ are continuous and also dx; v cx) itz are continuous. Finally, since  $\partial_{x_i}$  laut $(x_i - x_{n-i}, 0) = 0$ The condition Dw=0 implies  $\partial_{\chi_{\perp}} u(\chi_{\perp}, \chi_{n-1}, \partial) = 0$ 

so That v = C2(B(0,15) and Dv =0 on C2(B(0,1))