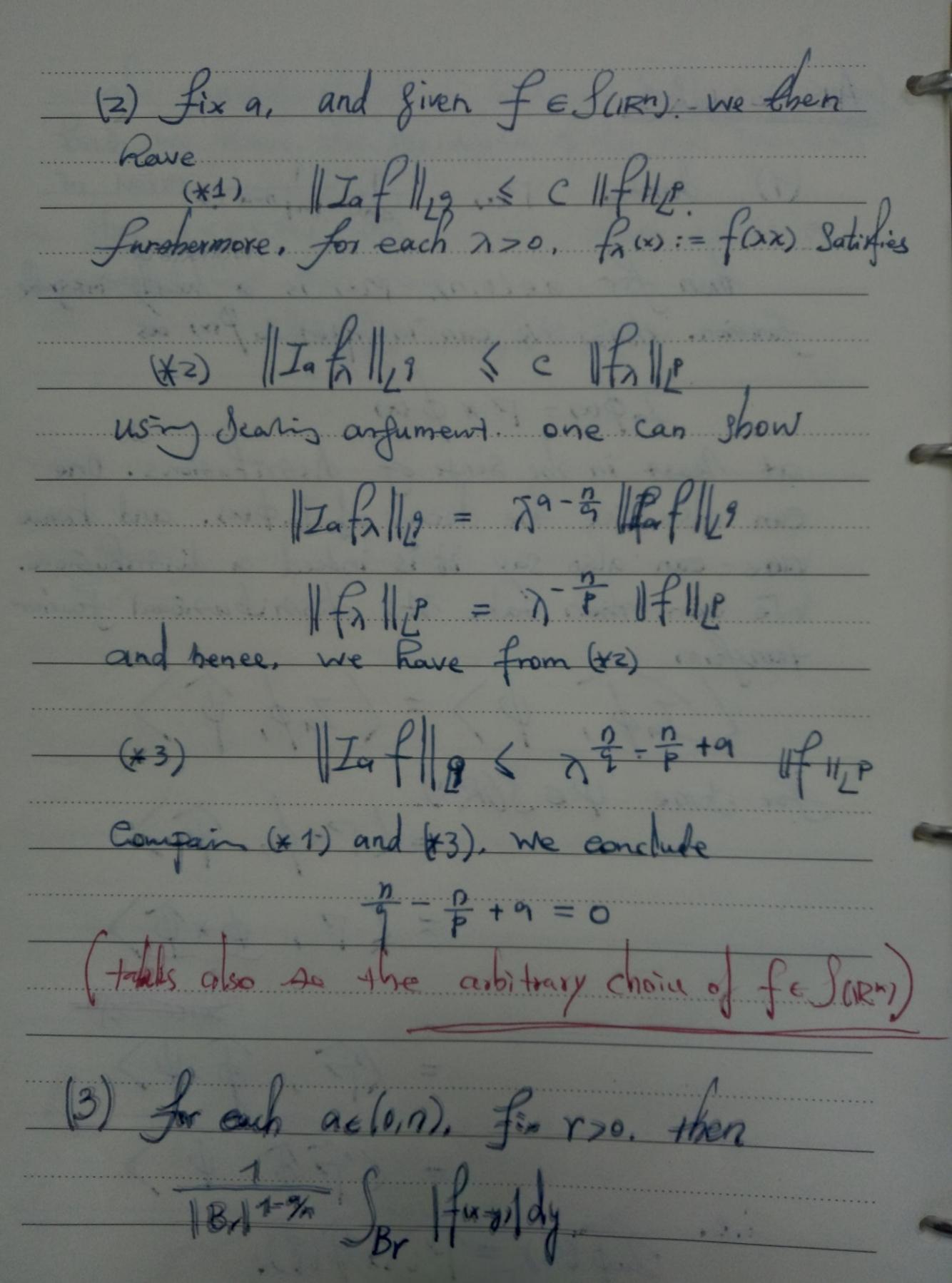
ANS 40 Week 9: $P(x) = \frac{1}{x_0} \frac{1}{|x|^{n-a}}$ then for a 6(0,n), P(x) is a locally integrable function. thus, we can interpret I a p(x) as In \$(x) = [7 * \$ (x) at Neast in the Sense of distributions. can also see the decay of Inp(x). and thence ware - ean also say it is indeed or disAnteution. We can then take its distributional Fourier (Inp, 4) = (Iap, 4)



Br1+9/2 = 0 Bzir Bzin | Fix = 1 dy 3=0 1811-4 Join Bin 1410ady $\frac{2}{3-0} = \frac{(z^{-1}r)^{n-\alpha}}{|Br|^{1-\alpha}} \int_{B_{2}-ir} \frac{1+(x-\gamma)!}{|B_{2}-ir|} dy$ $\leq c. \leq (2.1)^{n-\alpha}$ In f(x)< C Infix). Mucken houpt-Wheeden 1574, Trans. AHS. - for she proof of inequality in (2), see Sogge: Fourier Integrals in classical Thm 0,3,2,