Thursday, February 6 Consequently, for any 2>0, (1-2) logbyn< wh) < (1+2) loglog n Group Work #3 today Suggester Problems #2 posted today for simply shin. This many that FTRE number of NEX for which who has normal order loging n. Exercise: Show that sh these results hold for S2(n). Whith - log land > (log land) = 15 26 × (Uzlos x)^{2E}. Interesting observation: It's not hard to show that $2^{w(n)} \leq d(n) \leq 2^{(n)}$. Exercise. Show that this statement remains We've seen that for shoot all n, The of we replace every loglogy with loglogn-(Hint: note logbyn = logbyx + OZI) who > (1-E) loglogn and Slend < (1+E) loglogn. $\frac{1}{2} \frac{1}{2} \frac{1}$ for Va Enex.) Hordy-Romonyjon: Given ony ESO, So the typical size of dear is (log) log 2 + 0(1). This is in dissonance with the average order of dear belog by n. ! has density 1. We say that the inquality holds for silmost all n.

Lemma: let yez on set n=TT p. Extreme volves of which and selon. · Both equal 2 Minitely often, and this is best possible. The white = $\frac{\log n}{\log \log n} (1 + O(\frac{1}{\log \log n}))$, · <u>IL</u>2^k)=k, so <u>JL</u>n)=<u>los</u> n Nohibely many n's and this is best Ne ion determine the "monoinal order" By Chebysher's inequality, They by y y, of white Exercises: . If fly) = 0(1), then $= (\log y + 0(1)) + (\chi \perp)$ = $\log y + 0(1) + (\chi \perp)$ = $\log y + 0(1) = \log y \cdot (1 + (\chi \perp))$. 5 1 + OLFLY) = 1 + OLFLY) [power (128(1 + OLFLY)) = OLFLY) Sertes/lines-sporter hand Here whith = Thy = Thy Jbagy 42 ban/(1+0(1+y)) bay 6+D laglagn/(1+0(1+y)) · If fly x gly then be fly = be gly + OU) · [Croup Work #3:] Define OGD = 2' bgp ond mGD = #Spzx 3. Then PGX = lan (HO(1)) $\theta(x) = \pi(x) \log x \cdot (1 + \mathcal{O}(1_{280})),$ $= \frac{logn}{lalagn} \left(170 \left(\frac{1}{4lgn} \right) \right),$