1) Proof By contradiction Suppose graph G exists with at feest a components and minimum degrees => choose ony vertex u from one component and only vertex i from different component. U and v should have no common heighbor=> N(u) nN(v)= føg and obserie that the size of the union of their neighborg IN(u) UN(v) / < h-2 since u, v-excluded) By Inclusion/Exclusion=7 | N(u) V N (v) = $= |N(u)| + |N(v)| - |N(u) \cap N(v)| \ge \frac{n}{3} + \frac{n}{2} = n$ whereas | N(u) V N(v) | ≤ n-2 (×) Hence, u.v-should have at Reast a common reighbors => but this gields a contradiction and it means G-connected v

o) If it had a cycle S1, Sa, ..., Sk, then SIUSOV - USR should be in the same strong Connected component 10 mones or worth G18 y brio by trinogrator 108 8400 40 66 N. W. (M) N 6-16 46104 10 18 1 1 1 10 10 10 10 11 10 = 28 14 total (popol 10-10) NO (10) NO (10) NO (10) NO FRE JACLON EXCENDED INCOME DATE 14 9 - 8 - WN CON 1 - WN - WNE-(X) 6-03 (V) N V (V) SEOK N CIEMPTER 6 1808 to over Shoots VV SUMAN a she and so it she is all the all of the a Valorinoi sinora li ono