Observation (Proof): The statements a) & b) of the Rank Theorem follow from our discussion of finding the basis for Col A and Row A resp. In each case, the no of basis vectors corresponded to the number of pivot elements in RREF matrix R of a given matrix A.

- For statement c), ~~Assumation that~~ observe that pivot column of R correspond to basis vectors of Col A (leading variables of the homogeneous system), whereas the remaining columns corresponds to basis vectors of Nul A (free variable of homogeneous system)

  Since, the total no of columns = no of variables = n

  $n = \text{rank}(A) + \text{nullity}(A)$, as required