

Q1: We understood that if we want generate 1 degree, we need 1 edge to connect 1 edge needed 2 vertex.

If there is n edge, there should $2n$ vertex.

Thus $\text{sum of edges} = \frac{1}{2} \text{sum of degree}$.

Q2: There exist a path from u to another vertex v of the graph when v has an even degree, then should have two vertex to make vertex an even degree. for p1