

1. If G is a connected planar graph with n vertices, m edges and r regions, then **$n - m + r = 2$** .
2. If G is a maximal planar graph with n vertices ($n \geq 3$) and m edges then **$m = 3n - 6$**
3. Using Wagner's and Kuratowski's theorems, prove that the Petersen graph is non-planar.