

MATH 481
REVIEW PROBLEMS FOR EXAM 3

- (1) Let G be a k -regular graph of order n . What are the sizes of G and \overline{G} ?
- (2) Draw the labeled tree whose Prüfer sequence is 2,2,2,2.
- (3) Prove that $L(K_{1,n}) = K_n$.
- (4) Let G be a graph such that $\deg(v) \geq 2$ for all $v \in V$. Prove that G contains a cycle.
- (5) Let G be a connected planar graph of order n . Show that the average of all the degrees of vertices of G is less than 6.
- (6) Suppose a polyhedron has 100 hexagonal faces, 101 pentagonal faces, and 11 triangular faces. How many edges and vertices does it have?
- (7) Suppose $\chi(G) = 3$ and $\chi(G - v) = 2$ for any vertex $v \in V$. Show that G must be an odd cycle of order $n \geq 3$.