

Math 180 Homework 2

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4.4.7

4.4.8

4.5.8

4.6.5

P4 Prove that $K_{p,q}$ does not have a Hamiltonian cycle if $p \neq q$.

P6 Suppose a graph G on $n \geq 2$ vertices has at least $\frac{(n-1)(n-2)}{2} + 1$ edges. Prove that G is connected.

P7 Consider the k -dimensional hypercube graph Q_k .

1. What is $|V(Q_k)|$?
2. What is $|E(Q_k)|$?
3. What is the *diameter* (maximal distance between any two vertices) of Q_k ?
4. Prove that Q_k is bipartite.