

Math 5405 - Fall 2007

Homework # 3

Due September 20, 2007

Directions: You are expected to do your own work, consulting with other students is acceptable, but the work turned in must be your own. Be sure to show all work!!

1. 1.2.29

2. 1.3.47

3. 1.4.13

4. 2.1.33

5. a. Prove that an even graph (all vertices of even degree) has no cut-edges.
b. For every $j \geq 2$, prove that a j -regular bipartite graph has no cut-edge.
c. For each $k \geq 1$, construct a $2k+1$ regular simple graph having a cut-edge. (Hint: Consider the case $k=1$ first and generalize.)