

Math 412**HW1**

Due January 28, 2009

Solve five of the next six problems.

1. Consider the following four families of graphs: $A = \{\text{paths}\}$, $B = \{\text{cycles}\}$, $C = \{\text{complements of paths}\}$, $D = \{\text{complements of bipartite graphs}\}$. For each pair of these families, determine all isomorphism classes of graphs that belong to both families in the pair.

2. # 1.1.11 in the book. The word “determine” means, in particular, that you have to prove that there are no larger cliques and independent sets than your answer gives.

3. # 1.1.22 in the book.

4. # 1.1.24 in the book.

5. # 1.1.30 in the book.

6. # 1.1.38 in the book.

Problems below review basic concepts and their ideas could be used in the tests.

WARMUP PROBLEMS: Section 1.1: # 2, 4, 5, 9, 10. Do not write these up!

OTHER INTERESTING PROBLEMS: Section 1.1: # 14, 18, 19, 23, 27, 34. Do not write these up!