

Homework # 1. Due 1/26/09

1. Determine all non-isomorphic graphs of order 5.
2. Show that in any non-trivial graph there are two distinct vertices with the same degree.
3. Let G be a self-complementary graph, and let G' be obtained from $G \sqcup P_4$ by adding edges from every vertex of G to the two end-vertices of P_4 . Show that G' is self-complementary, and deduce that there are self complementary graphs of order n for every positive integer n with $n \equiv 0$ or $1 \pmod{4}$.