

# Homework 11

## Mathematics in Computer Science

1. How many edges are there in a clique with  $n$  vertices?
2. If a graph has four odd degree vertices prove that there are two paths that together include each edge exactly once.
3. Write our construction of reducibility of 3-SAT to clique and prove that 3-SAT formula  $f$  with  $k$  clauses is satisfiable if and only if the resulting graph has a clique of size  $k$ .