Assignment 05

1. We have a standard six-sided die. Let *X* be the number of times that a '6' occurs over *n* throws of the die. Let *p* be the probability of the event $X \geq n/4$. Compare the best upper bounds on *p* that you can obtain using Markov's inequality, Chebyshev's inequality, and Chernoff bounds.

2. Determine the moment generating function for the binomial random variable $B(n, p)$.