Stat 461 HW #2

Note Title

Problem 1 I roll a six-sided die and observe the number N on the uppermost face. I then toss a fair coin N times and observe X, the total number of heads to appear. What is the probability that $N=3$ and $X=1$? What is the probability that $X=4$?

Problem 2 A nickel is tossed 20 times in succession. Every time that the nickel comes up heads, a dime is tossed. Let X count the number of heads appearing on tosses of the dime. Determine $P[X=0]$.

Problem 3 The number of accidents occuring in a factory in a week is a Poisson random variable with mean 1. The number of individuals injured in different accidents is independently distributed, each with mean 3 and variance 4. Determine the mean and variance of the number of individuals injured in a week.