MATH 407 FALL 2009

QUIZ 5

1. In a collection of 70000 married couples find approximately the probability that in at least one of them, (a) both husband and wife were born on December 22; (b) both husband and wife were born on the same day.

2. Suppose that a batch of 100 items contains 8 that are defective and 92 that are not defective. If X is the number of defective items in a randomly drawn sample of 10 items from the batch, find (a) $P(X = 0)$; (b) $P(X > 2)$; (c) Compute the distribution for the number of batches one has to inspect before one with at most 1 defective is found. (Hint: Let $N =$ the number of batches inspected before one with at most 1 defective is found. Compute $P(N = k)$ for $k = 1, 2, 3, \ldots$.)