MATH 407 FALL 2009

QUIZ 9

1. Let $X_1, \ldots, X_4$ be random variables such that
   (i) $EX_i = 0, EX_i^2 = 1$, $i = 1, \ldots, 4$,
   (ii) $EX_iX_j = 0$ for all $i \neq j$.
   Compute the correlation of a) $X_1 + X_2$ and X_1; b) $X_1 + X_2$ and $X_3 + X_4$.

2. Compute the expected number of rolls of a fair die until the number 6 appears for the first time.