

Math 477 “QUIZ” for Lecture 17

NAME: (print!) _____

E-MAIL ADDRESS: (print!) _____

1. For the sample space of all n coin-tosses of a loaded coin with probability p of landing on Head, let X be the number of occurrences of two heads-in-a-row that come after a tail and is followed by a tail, (i.e. the number of occurrences of $thht$). Find $E[X]$

2. The joint density function of X and Y is given by

$$f(x, y) = \begin{cases} \frac{x+y}{8} & , \quad \text{if } 0 < x < 2, 0 < y < 2; \\ 0 & \text{otherwise} \end{cases}$$

Find

(i) $E[X + Y]$

(ii) $Var(X + Y)$