

Math 477 REAL QUIZ #3

NAME: (print!) _____

E-MAIL ADDRESS: (print!) _____

1. (3 points) Let X be the winnings of a gambler and assume that

$$P\{X = 1\} = 0.1 \quad ; \quad P\{X = 2\} = 0.4 \quad ;$$

$$P\{X = -1\} = 0.3 \quad ; \quad P\{X = -2\} = 0.2 \quad ;$$

(i) Compute the conditional probability that gambler wins i , for $i = 1, 2$, given that he wins a positive amount. (ii) Find $E[X]$, his expected winning.

2. (4 points) The number of injury claims per month is modeled by a random variable N with

$$P\{N = n\} = \frac{4}{(n+1)(n+2)(n+3)}, \quad \text{where } n \geq 0 \quad .$$

Determine the probability of at least one claim during a particular month, given that there have been at most two claims during that month.

3. (3 points) An n -faced fair die, marked with $1, 2, \dots, n$ is rolled. What are the Expected number of the cube of the number of dots of landed face?