**Math 10A with Professor Stankova**
**Quiz 13; Monday, 11/20/2017**
**Section #107; Time: 11 AM**
**GSI name: Roy Zhao** **Name:** _____

Circle True or False or leave blank. (1 point for correct answer, $-1$ for incorrect answer, 0 if left blank)

1. True False The probability function $P : \Omega \to \mathbb{R}$ gives the probability of any single outcome occurring.
2. True False Let $X, Y$ be random variables such that $X - Y = 1$. Then $X$ and $Y$ can be independent variables.

Show your work and justify your answers. Please circle or box your final answer.

3. (10 points) I have a loaded coin such that tails appears three times as likely as heads. Suppose I get paid 1 dollar for every head that I flip. I flip the coin once and want to know how much I get paid.
   (a) (4 points) Describe what the triplet $(\Omega, P, X)$ is in this scenario.

   (b) (5 points) Graph any of the following that apply (be sure to clearly denote what you are drawing): PDF, PMF, CDF

   (c) (1 point) Calculate the payout and the standard error of this game.