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St. Petersburg Paradox - Quiz

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Question 1

1 point possible (graded)

In the St. Petersburg paradox discussed in class, we know the following, where Y represents winnings and X represents the number of flips required until the coin comes up heads. Winnings are defined as $Y = 2^X, X \sim G(0.5),$ and $E(X) = 2$. Which of the following gives the expectation of Y?

- a. 2X
- b. x
- c. 2x
- d. infinity ✔

Explanation

The expectation of Y is infinity.

▾ Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression

Moments of a Distribution and Auctions
Finger Exercises due Oct 31, 2016 at 05:00 IST

Expectation, Variance, and an Introduction to Regression
Finger Exercises due Oct 31, 2016 at 05:00 IST

Module 5: Homework
Homework due Oct 24, 2016 at 05:00 IST

▸ Exit Survey

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✔ Correct (1/1 point)

Question 2

1/1 point (graded)

True or False: For most people, the utility (or benefit) they derive from playing the St Petersburg paradox is exactly equivalent to their expected winnings from playing the game.

a. True

b. False ✔

Explanation

As discussed in class, the expectation of winnings is infinity. You can imagine that people probably do not place an infinite value and probably not willing to pay an infinite amount to play this game. Instead, people likely have a certain utility function that describes how much they value playing the game. This utility function most likely exhibits diminishing marginal utility of money.

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Question 3

1 point possible (graded)

Which of the following correctly describes the concept of diminishing marginal utility?

- a. Someone who has $100 dollars values an additional dollar less than someone who has $10,000
- b. Someone who has $10,000 dollars values an additional dollar less than someone who has $100 ✔
- c. Additional money brings you more value up to a certain point, when additional money actually makes you less happy. ✔
- d. Extra money does not bring you any utility at all after a certain point.

Explanation

The concept of diminishing marginal utility is a common concept in economics. This concept captures the way that people value, or derive utility, from money. The idea is that the marginal utility from earning one extra dollar is different for a given individual depending on how much income they have. When a person has little income, each additional dollar of income brings them a certain amount of utility. As that person's income increases, each additional dollar of income brings them less and less utility.

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