

Quiz 2

1. I throw a fair dice indefinitely often. If it shows 1 then the sum in the hat is burned and the game stops. If it shows 2 then I immediately get 2 roubles, the sum in the hat is burned and the game stops. If it shows 3 then the sum in the hat is burned and the game continues. If it shows 4 then I immediately get 4 roubles and the game continues. If it shows 5 then 5 rouble is added to the hat and the game continues. If it shows 6 nothing happens and the game continues.

What is my expected total payoff?

2. I throw a fair dice indefinitely often. If it shows 1 then the sum in the hat is burned and the game stops. If it shows 2 then I immediately get 2 roubles, the sum in the hat is burned and the game stops. If it shows 3 then the sum in the hat is burned and the game continues. If it shows 4 then I immediately get 4 roubles plus the sum in the hat and the game stops. If it shows 5 then 5 rouble is added to the hat and the game continues. If it shows 6 nothing happens and the game continues.

What is my expected total payoff?

3. Winnie-the-Pooh starts at zero on the real line. Every minute he moves one step to the left with probability 0.4, one step to the right with probability 0.1 or skips. If he reaches points (-2) or (2) he stays there forever.

What is the expected duration of the game?

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What is the probability that he will eventually rest at (2) ?

5. Alice throws a fair coin until the sequence HHH appears.

What is the expected duration of the game?

6. Alice throws a fair coin until the sequence HHT appears.

What is the expected duration of the game?