

GAMES COURSE

HOMEWORK 7

1. Put your NAME on all pages.
2. What is the probability that a fair coin lands on heads 5 times in a row? What is the probability that it lands on the same side (tails or heads) 5 times in a row? Given that a fair coin has landed on heads 4 times in a row, what is the probability that the next flip will be a heads?
3. I owe my buddy \$0.25, but I only have a single. Come up with a (practical) game we can play so that the expected cost to me is \$0.25.
4. Suppose the probability of my house catching fire in my lifetime is $\frac{1}{100,000}$. If it does catch fire, I stand to "gain" (trauma aside) \$301,000. The cost of the insurance in my lifetime, however, will be \$1000 (with or without a fire, so I only gain \$300,000). Who expects to come out ahead, me or the insurance company? What is the expectation? Why does the losing party participate?
5. 23 on page 387
6. 25 on page 387
7. Calculate the possible number of full houses.
8. After the flop (3 cards are on the table) I need an 8 to give me that straight. What are the odds that I draw a straight with the next two cards (the turn and the river)?
9. How many different spellings can I make with the characters in the word "Tennessee"? (It is not 9!.)
10. Extra Credit (not too hard though) 19 on 387