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Stats Homework 3

Problem 1

1000 Times

|  |  |
| --- | --- |
| 0 Heads: | 110 |
| 1 Heads: | 376 |
| 2 Heads: | 381 |
| 3 Heads: | 133 |

10000 Times

|  |  |
| --- | --- |
| 0 Heads: | 1260 |
| 1 Heads: | 3791 |
| 2 Heads: | 3711 |
| 3 Heads: | 1238 |

100000 Times

|  |  |
| --- | --- |
| 0 Heads: | 12646 |
| 1 Heads: | 37264 |
| 2 Heads: | 37545 |
| 3 Heads: | 12545 |

Problem 2

*A and B have a coin which they suspect is unfair, because they tossed it 100 times and got 65 heads. They want to decide who goes first in a game and they have no other coin to toss, so they have to use this coin. Describe a method to use this coin to make a fair decision. (There are at least three methods)*

An easy way to figure out who could go first is to toss the coin twice. If it comes up heads, and then tails, then player A wins. If it comes up tails and then heads, then player B wins. If it comes up tails/tails or heads/heads, you toss it again.

Problem 3

*Write a program to simulate the method you developed in Problem 2. Run it 10,000 times. Does your program decide between A and B fairly?*