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**5.01 Worksheet**

**Frequency of Heads vs. Tails Simulated with a Fair Coin (50:50)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 10x | 100x | 1000x | 10000x |
| Heads | 5 | 46 | 504 | 4997 |
| Tails | 5 | 54 | 496 | 5003 |
|  |  |  |  |  |
| Heads | 4 | 51 | 542 | 5066 |
| Tails | 6 | 49 | 458 | 4944 |
|  |  |  |  |  |
| Heads | 4 | 54 | 478 | 4988 |
| Tails | 6 | 46 | 522 | 5012 |
|  |  |  |  |  |
| Heads | 5 | 51 | 502 | 5004 |
| Tails | 5 | 49 | 498 | 4996 |
|  |  |  |  |  |
| Heads | 3 | 47 | 500 | 4914 |
| Tails | 7 | 53 | 500 | 5086 |
|  |  |  |  |  |
| Avg. Heads | 4.2 | 49.8 | 505.2 | 4993.8 |
| Avg. Tails | 5.8 | 50.2 | 494.8 | 5006.2 |

**Frequency of Heads vs. Tails Simulated with a Biased Coin (6:4)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 10x | 100x | 1000x | 10000x |
| Heads | 5 | 36 | 425 | 3977 |
| Tails | 5 | 64 | 575 | 6023 |
|  |  |  |  |  |
| Heads | 4 | 44 | 385 | 4052 |
| Tails | 6 | 56 | 615 | 5948 |
|  |  |  |  |  |
| Heads | 4 | 40 | 370 | 3992 |
| Tails | 6 | 60 | 630 | 6008 |
|  |  |  |  |  |
| Heads | 5 | 40 | 405 | 3957 |
| Tails | 5 | 60 | 595 | 6043 |
|  |  |  |  |  |
| Heads | 6 | 38 | 402 | 3974 |
| Tails | 4 | 62 | 598 | 6026 |
|  |  |  |  |  |
| Avg. Heads | 4.8 | 39.6 | 397.4 | 3976.4 |
| Avg. Tails | 5.2 | 60.4 | 602.6 | 6023.6 |