The Three Dice Decentralized Consensus Algorithm

Calculating Probabilities of Various Targets Using Three Dice

Total Possibilities: 6 x 6 x 6 = 216

1. Simple Target: Probability of getting a sum of 12

The combinations for a sum of 5 with three dice are:

The combinations for a sum of 12 with three dice are:

- (6, 5, 1)
- (6, 4, 2)
- (6, 3, 3)
- (6, 2, 4)
- (6, 1, 5)
- (5, 6, 1)
- (5, 5, 2)
- (5, 4, 3)
- (5, 3, 4)
- (5, 2, 5)
- (5, 1, 6)
- (4, 6, 2)
- (4, 5, 3)
- (4, 4, 4)
- (4, 3, 5)
- (4, 2, 6)
- (3, 6, 3)
- (3, 5, 4)
- (3, 4, 5)

- (3, 3, 6)
- (2, 6, 4)
- (2, 5, 5)
- (2, 4, 6)
- (1, 6, 5)
- (1, 5, 6)

Analysis: There are 25 possible outcomes for a sum of 12 with three dice.

Probability Calculation: 25/216 ~ 0.1157, or 11.57%

2. Difficult Target: Probability of getting a sum of 5

- (1, 1, 3)
- (1, 2, 2)
- (1, 3, 1)
- (2, 1, 2)
- (2, 2, 1)
- (3, 1, 1)

Analysis: There are 6 possible outcomes for a sum of 5 with three dice.

Probability Calculation: 6/216=1/36 ~ 0.0278, or 2.78%