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MATH 2605

Project 1 – Pinball Project

Report

1. **Random Trials:**

Case: s=6 r=1

List of frequency = [719, 241, 23, 17,0,0,…0]

Trials: 1000

Relative Frequency of 0: 719/1000 = 0.719

Relative Frequency of 1: 241/1000 = 0.241

Relative Frequency of 2: 23/1000 = 0.023

Relative Frequency of 3: 17/1000 = 0.017

Longest Orbit = 3 hits

Case: s=6 r=2

List of frequency = [411, 186, 158, 120, 67, 26, 19, 7, 3, 3, 0, 0,…0]

Trials: 1000

Relative Frequency of 0: 411/1000 = 0.411

Relative Frequency of 1: 186/1000 = 0.186

Relative Frequency of 2: 158/1000 = 0.158

Relative Frequency of 3: 120/1000 = 0.120

Relative Frequency of 4: 67/1000 = 0.067

Relative Frequency of 5: 26/1000 = 0.026

Relative Frequency of 6: 19/1000 = 0.019

Relative Frequency of 7: 7/1000 = 0.007

Relative Frequency of 8: 3/1000 = 0.003

Relative Frequency of 9: 3/1000 = 0.003

**Systematic Trials:**

Case: s=6 r=1

List of Frequency = [720, 250, 17, 12, 1, 0, 0,…0]

Trials: 1000

Relative Frequency of 0: 720/1000 = 0.72

Relative Frequency of 1: 250/1000 = 0.25

Relative Frequency of 2: 17/1000 = 0.17

Relative Frequency of 3: 12/1000 = 0.12

Relative Frequency of 4: 1/1000 = 0.001

Longest Orbit = 4 hits

Case: s=6 r=2

List of frequency = [413, 192, 157, 116, 62, 31, 14, 8, 3, 3, 0, 0, 0, 0, 1, 0, 0,…0]

Trials: 1000

Relative Frequency of 0: 413/1000 = 0.413

Relative Frequency of 1: 192/1000 = 0.192

Relative Frequency of 2: 157/1000 = 0.157

Relative Frequency of 3: 116/1000 = 0.116

Relative Frequency of 4: 62/1000 = 0.062

Relative Frequency of 5: 31/1000 = 0.031

Relative Frequency of 6: 14/1000 = 0.014

Relative Frequency of 7: 8/1000 = 0.006

Relative Frequency of 8: 3/1000 = 0.003

Relative Frequency of 9: 3/1000 = 0.003

Relative Frequency of 14: 1/1000 = 0.001