Stats Set Report

Caleb Smith

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1 The Game

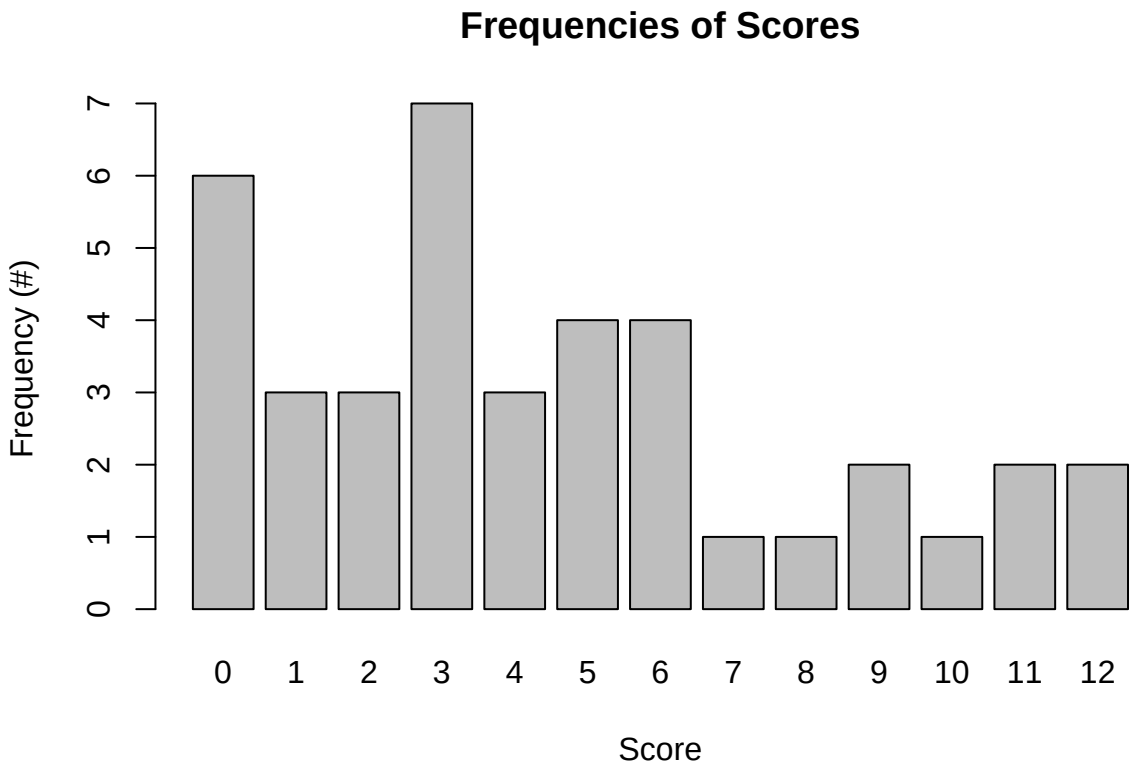
Our game is a reinterpretation of a card game titled "Set". Essentially, you attempt to match together *sets* of three cards to score points. Further instructions (and the game itself) can be found online here.

2 Probability Model

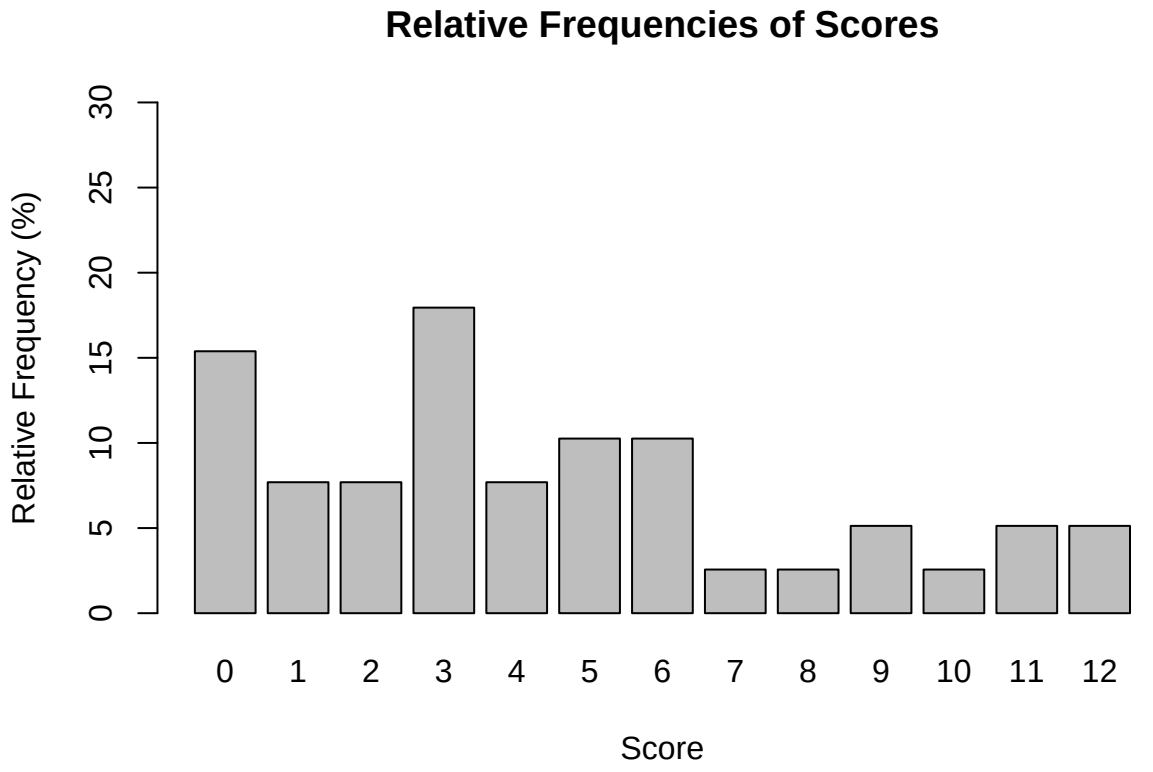
Because our game relies upon player skill to determine payout (and not just chance), our probability model is **empirical**. Video of us collecting data to create this model can be found on Google Drive, here and here.

Collected Data:

```
##  [1]  5 11  7  5  3  3 10  0  2  0  3  3  3  1  3  1  2 11  6 12  6  8  3
## [24]  6  1 12  9  9  0  0  4  0  5  0  2  5  4  4  6
```



0	1	2	3	4	5	6	7	8	9	10	11	12
6	3	3	7	3	4	4	1	1	2	1	2	2



0	1	2	3	4	5	6	7	8	9	10	11	12
15.38	7.69	7.69	17.95	7.69	10.26	10.26	2.56	2.56	5.13	2.56	5.13	5.13

Expected sets:

$$E(S) = 4.49$$

SD of sets:

$$SD(S) = 3.59$$

3 Payout

Payout formula:

$$P(S) = 2 * S$$

Expected payout:

$$E(P) = 8.97$$

SD of payout:

$$SD(P) = 7.18$$

Cost to play: $10