

# Stats Set Report

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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:

<http://caleb.techhounds.com/carnival>

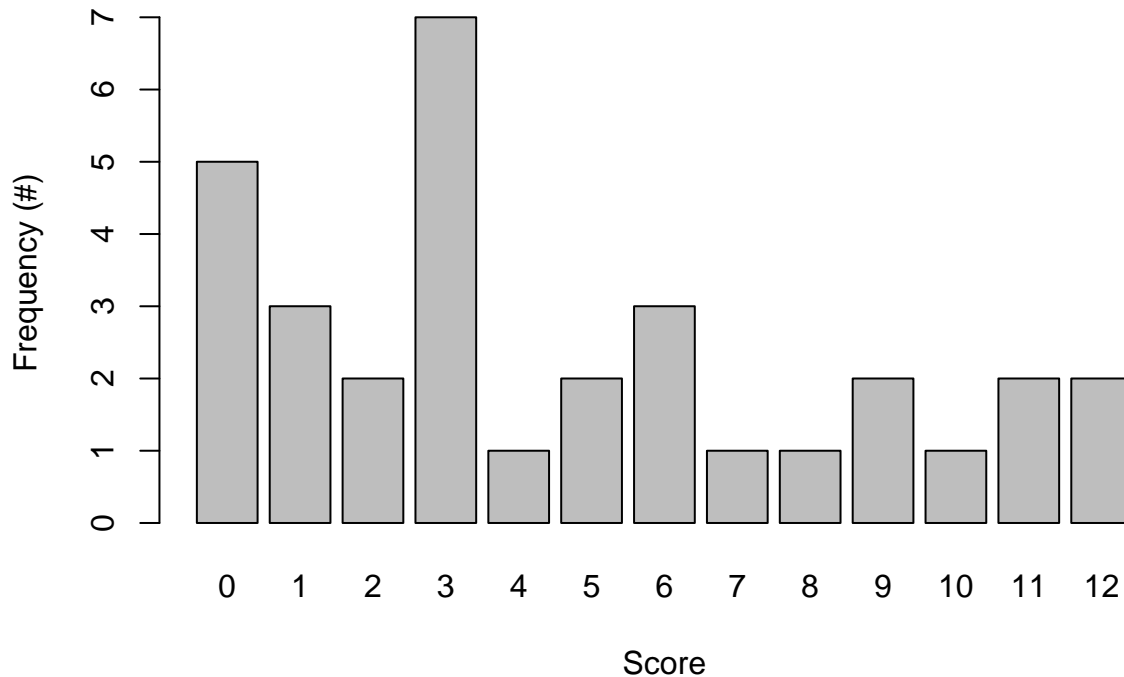
## 2 Probability Model

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](#).

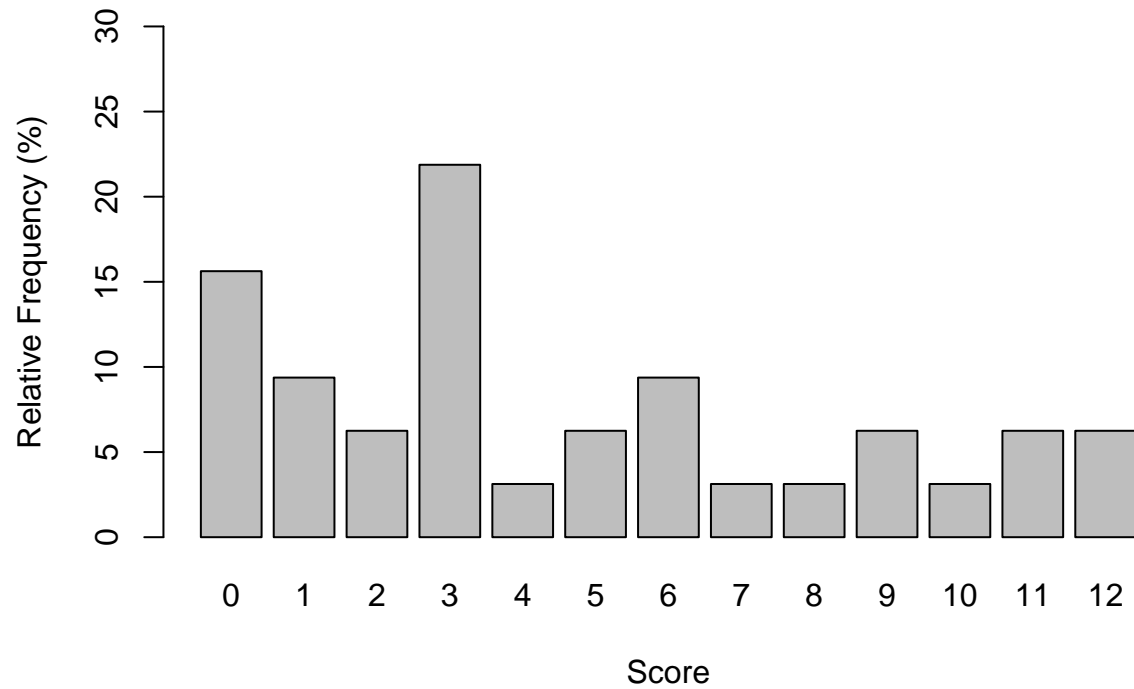
Collected Data:

```
## [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
```

**Frequencies of Scores**



## Relative Frequencies of Scores



Expected sets:

$$E(S) = 4.66$$

SD of sets:

$$SD(S) = 3.85$$

### 3 Payout

Payout formula:

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

Expected payout:

$$E(P) = 9.8$$

SD of payout:

$$SD(P) = 6.2$$

Cost to play: \$10