# Descriptive Statistics

|  |  |
| --- | --- |
| Range | 2.2587 |
| Interquartile range | 0.6285 |
| Variance | 0.2170 |
| Standard Deviation | 0.4658 |

# Probability Theory



so this event space have more elements than the event space of #7.

# Inferential Statistics

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#### **Motivation & Description of Experimental Procedure**

We conducted an experiment to see if Tiffany could influence the result of tossing a tetrahedral (four-sided) die.

At home on Wednesday, November 14, 2018, Minh tossed a six-sided die, while Tiffany concentrated hard to get the die to land 2. The die was tossed twenty times. For each toss the result of the toss was recorded.

#### **Null Hypothesis**

Our null hypothesis is that Tiffany is not able to influence the result of flipping the die. Under this hypothesis the probability of a success prediction is 1/6.

#### **Alternative Hypothesis**

Our alternative hypothesis is that Tiffany is able to influence the toss of a die.

#### **Test Statistic**

Our test statistic is the number of tosses that were correctly predicted. The test statistic follows a binomial distribution, which we will learn more about later.

#### **Rejection Region**

We are willing to admit that Tiffany can influence the toss to some degree provided the number of successes is 7 or more.

#### **Results & Significance**

Tiffany successfully influenced 7 tosses.

If Tiffany has no ability to influence a toss, we expect the number of successes to be this great or greater with a probability of approximately .0371.

#### **Formal Conclusion**

There is sufficient evidence to reject the hypothesis that Tiffany is not able to influence a toss in favor of the hypothesis that Tiffany has some power to influence a toss.

#### **Informal Discussion**

We see strong evidence that Tiffany can influence a toss. We should certainly put Tiffany on our list of persons of interest.

#### **Technical notes & documentation**

Computations were performed using Excel version 16.0.4738.1000.

