Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Experimental Probability – Simple Event

***Calculating Experimental Probability***

**Martin has a bag of marbles. He removed one marble at random, recorded the color and then placed it back in the bag. He repeated this process several times and recorded his results in the table. Find the experimental probability of drawing each color.**

|  |  |
| --- | --- |
| **Color** | **Frequency** |
| **Red** | **12** |
| **Blue** | **10** |
| **Green** | **15** |
| **Yellow** | **13** |

**Step (1): Identify the number of trials: 12 + 10 + 15 + 13 = 50**

**Step (2): Find the experimental probability for each event**

**Red = frequency of the event = 12 = 6 Blue = frequency of the event = 10 = 1**

 **Total number of trials 50 25 Total number of trials 50 5**

**Green = frequency of the event = 15 = 3 Yellow = frequency of the event = 13**

 **Total number of trials 50 10 Total number of trials 50**

1. A spinner has three unequal sections: red, yellow, and blue. The table shows the results of Nolan’s spins. Find the experimental probability of landing on each color. Write your answers in simplest form.

|  |  |
| --- | --- |
| Color | Frequency |
| Red | 10 |
| Yellow | 14 |
| Blue | 6 |

1. A spinner has four sections lettered A, B, C, and D. The table shows the results of several spins. Find the experimental probability of spinning each letter as a fraction in simplest form.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Letter | A | B | C | D |
| Frequency | 14 | 7 | 11 | 8 |

1. The names of the students in Ms. Thomas math class are written on the board. Ms. Thomas writes each name on an index card and shuffles the cards. Each day he randomly draws a card, and the chosen student explains a math problem at the board. What is the probability that Smart is chosen today? What is the probability that Regina is not chosen today?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Madison | Regina | Leon | Savannah | Kylie |
| Autumn | Ethan | Chenai | Smart | Regina |
| Elijah | Shaniya | Morgan | Khadalia | Ashyra |
| Regina | Smart | Jacob | Shiloh | Anthony |
| Arly | Maddison | Smart | Darian | Smart |

1. Destiny rolls a strike in 6 out of the 10 frames of bowling. What is the experimental probability that Destiny will roll a strike in the first frame of the next game?
2. Mica and Joan are on the same softball team. Mica got 8 hits out of 48 times at bat, while Joan got 12 hits out of 40 times at bat. Who do you think is more likely to get a hit her next time at bat?
3. You check 50 cartons of eggs. Eight of the cartons have at least one cracked egg. What is the experimental probability that a carton of eggs has no cracked eggs?
4. The chart shows the results of rolling a number cube 50 times. What is the experimental probability of rolling an odd number?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| # Rolled | 1 | 2 | 3 | 4 | 5 | 6 |
| Times rolled | 10 | 4 | 8 | 11 | 11 | 6 |

***Making a Prediction***

**Danae found that the experimental probability of her making a bull’s eye when throwing darts is 2/10 or 20%. Out of 75 throws, about how many bull’s eyes could she predict she would make?**

**Method 1 (fraction x total number) Method 2 (Change percent to decimal then mult)**

**2 x 75 x = 15 x = (0.2) 75**

**10 x = 15**

1. Rachel’s free-throw average for basketball is 60%. She wants to predict how many times in the next 50 tries she will make a free throw.
2. In tennis, Gabby serves an ace, a ball that can’t be returned, 4 out of the 10 times she serves. What is the experimental probability that Gabby will serve an ace in the first match of the next game? Make a prediction about how many aces Gabby will have for the next 40 serves.
3. It rains 3 out of the last 8 days in May. If this trend continues, how many rainy days would you expect in June?
4. Out of 400 bicycles, 7 were found to have a defective brake.
5. What is the experimental probability that the next bike will have a defective brake?
6. Predict how many bikes out of 3,000 will have defective brakes
7. Home Depot sells light bulbs. Out of 575 light bulbs, 23 were found to have defective filaments.
8. What is the experimental probability that the next light bulb will have a defective filament?
9. Predict how many bulbs out of 8,000 will have defective filaments.
10. A tile company makes ceramic bowls. Out of 150 bowls, 3 were chipped.
11. What is the experimental probability that the next bowl made will **not** be chipped?
12. Predict how many bowls out of 7,500 will be chipped.