Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Simple Probability Events**

1. A class tossed coins and recorded 161 heads and 179 tails. According to the data, what is the probability of flipping tails?
2. A jar contains 30 red marbles, 50 blue marbles, and 20 white marbles. You pick one marble from the jar at random.
	1. P(red) b. P(blue) c. P(not white) d. P(red or blue

Use the general addition rule to compute the probability that if you roll two six-sided dice.

1. you get doubles or a sum of 4
2. you get doubles or a sum of 7
3. you get a 5 on the first die or you get a 5 on the second die.

Use the Venn Diagram to answer the following questions.



1. P(A)
2. P(B)
3. P(B)’
4. P(A ∪ B)
5. P(A ∩ B)
6. When you arrive home today, you find 27 cupcakes in a large circular plate. There are 13 that have icing, 11 have sprinkles, and 4 have both.



* 1. P(I)
	2. P(S)
	3. P(I ∪ S)
	4. P(I ∩ S)
1. The probability that it will snow on Saturday is 25%. The probability that it will snow on Sunday is 29%. The probability it will snow both days is 12%. What is the probability it will snow on Saturday or Sunday. Hint: Draw a Venn Diagram.
2. Use the data below to find each of the following probabilities.
	1. P(Chocolate)
	2. P(Chocolate)’
	3. P(Sprinkles ∩ Cookie Dough)
	4. P(Caramel ∪ Vanilla)

**Conditional Probability**

**The table shows the results of a poll of randomly selected high school students who were asked if they prefer to hear all school announcements in the morning or afternoon.**

|  |  |  |
| --- | --- | --- |
|  | **Underclassmen** | **Upperclassmen** |
| Morning | 8 | 14 |
| Afternoon | 18 | 10 |

1. Find P(Morning|Underclassmen)
2. Find P(Afternoon|Upperclassmen)

**The table shows the results of a customer satisfaction survey for a cellular service provider, by location of the customer. In the survey, customers were asked whether they would recommend a plan with the provider to a friend.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Arlington** | **Towson** | **Parkville** |
| Yes | 40 | 35 | 41 |
| No | 18 | 10 | 6 |

1. Find P(Yes)
2. Find P (Yes|Arlington)
3. Are the 2 probabilities the same?

**Roberto is the owner of a car dealership. He is assessing the success rates of his top three sales people in order to offer one of them a promotion. Over two months, for each attempted sale, he records whether the sales person made a successful sale or not. The results are shown in the cart below.**

|  |  |  |
| --- | --- | --- |
|  | **Successful** | **Unsuccessful** |
| Becky | 6 | 6 |
| Raul | 4 | 5 |
| Darrell | 6 | 9 |

1. Find P(Successful|Becky)
2. Find P(Unsuccessful|Darrell)