

Name: _____ Date: _____

Mutually Exclusive Practice

Determine if the following events are mutually exclusive or overlapping.

- _____ 1. The experiment is rolling a die.
The 1st event: the number is greater than 3
The 2nd event: the number is even.
- _____ 2. The experiment is year in school.
The 1st event: the person is a senior.
The 2nd event: the person is a junior.
- _____ 3. The experiment is answering multiple choice questions.
The 1st event: the correct answer is chosen
The 2nd event: the answer A is chosen.
- _____ 4. The experiment is selecting a chocolate bar.
The 1st event: the bar has nuts
The 2nd event: the bar has caramel.

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- _____ 5. One card is randomly drawn from a deck of 52 cards. The card is face down on the table. What is the probability of getting a Jack or a Spade?

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

- _____ 6. you get doubles or a sum of 4

- _____ 7. you get doubles or a sum of 7

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

- _____ 8. you get a 5 on the first die or you get a 5 on the second die.
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Use the Venn Diagram to answer the following questions.

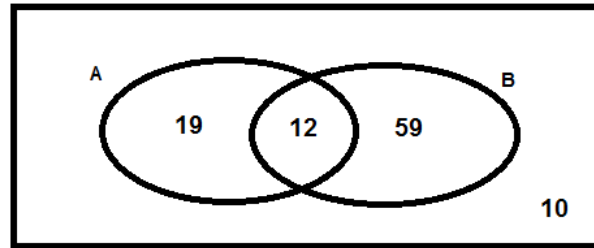
_____ 9. $P(A)$

_____ 10. $P(B)$

_____ 11. $P(B)'$

_____ 12. $P(A \cup B)$

_____ 13. $P(A \cap B)$



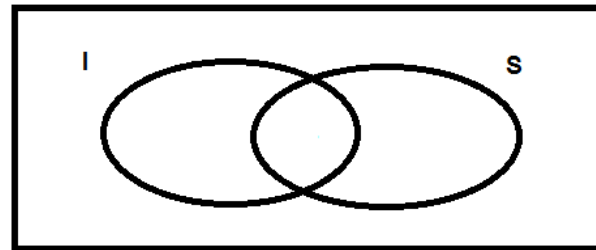
When you arrive home today, you find 27 cupcakes in a large circular plate. There are 13 that have icing 11 have sprinkles, and 4 have both.

_____ 14. $P(I)$

_____ 15. $P(S)$

_____ 16. $P(I \cup S)$

_____ 17. $P(I \cap S)$



Use the data below to find each of the following probabilities.

Coollest Deals Sold at Ike's

Topping choice	Ice cream choice			
	Vanilla	Chocolate	Cookie dough	Mint chip
Sprinkles	9	12	16	14
Hot fudge	11	4	16	15
Caramel	10	12	18	15

_____ 18. $P(\text{Chocolate})$

_____ 19. $P(\text{Chocolate})'$

_____ 20. $P(\text{Sprinkles} \cap \text{Cookie Dough})$

_____ 21. $P(\text{Caramel} \cup \text{Vanilla})$

Mutually Exclusive and Overlapping Events

Ben spins a spinner with the numbers 1–8. Find each probability.

1. Ben spins a multiple of 3 or a multiple of 5. _____
2. Ben spins a number greater than 2 or an even number. _____
3. Ben spins a prime number or an odd number. _____

For Problems 4–7, use the scenario described below.

Of the 400 doctors who attended a conference, 240 practiced family medicine and 130 were from countries outside the United States. One-third of the family medicine practitioners were not from the United States.

	Family Medicine	Not Family Medicine	Total
From US	160		
Not From US		50	
Total			400

4. Complete the two-way table using this information.
5. What is the probability that a doctor at the conference practices family medicine or is from the United States?

6. What is the probability that a doctor at the conference practices family medicine or is not from the United States?

7. What is the probability that a doctor at the conference does not practice family medicine or is from the United States?

Find the probabilities for Problems 9 and 10.

Round to the nearest hundredth.

8. A student is collecting a population of laboratory mice to be used in an experiment. He finds that of the 236 mice in the lab, 173 mice are female and 99 have pink eyes. Just 10 of the pink-eyed mice are male. What is the probability that a mouse is female or has pink eyes?

9. A group of 4 friends buys a CD of 12 computer screen savers. Each friend will pick 1 screen saver to use on their computer. What is the probability that at least 2 of the friends will choose the same screen saver for their computer?

Cards numbered 1–25 are placed in a bag and one is drawn at random.

Use the scenario in the box for Problems 1–3. Tell whether the events are mutually exclusive (ME) or overlapping (O), and give the probability of each.

19. drawing an odd number or a multiple of 7 _____ $P =$ _____

20. drawing an even number or a perfect square _____ $P =$ _____

21. drawing a prime number greater than 10 or a multiple of 5 _____ $P =$ _____