Name _____ Date _____

Day 3 – Compound Probability: Mutually Exclusive vs. Overlapping

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.

_____ 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?

Standard Deck of 52 Playing Cards			
Black	*Black*	*Red*	*Red*
A♠	A♣	A♥	A♦
2♠	2♣	2♥	2♦
3♠	3♣	3♥	3♦
4♠	4♣	4♥	4♦
5♠	5♣	5♥	5♦
6♠	6♣	6♥	6♦
7♠	7♣	7♥	7♦
8♠	8♣	8♥	8♦
9♠	9♣	9♥	9♦
10♠	10♣	10♥	10♦
Face Cards: Jack♠	Jack♣	Jack♥	Jack♦
Queen♠	Queen♣	Queen♥	Queen♦
King♠	King♣	King♥	King♦

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

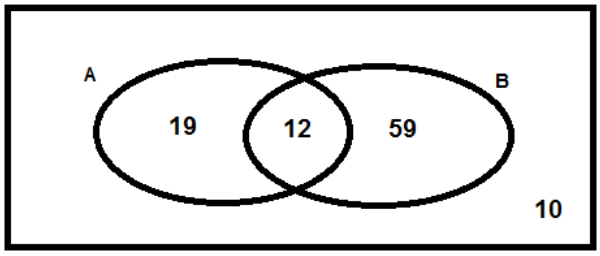
_____ 6. you get doubles or a sum of 4

_____ 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.

Use the Venn diagram to answer the following questions.



_____ 9. P(A)

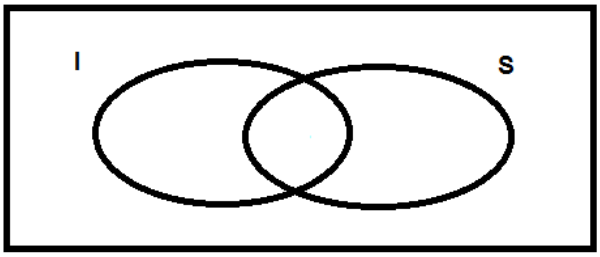
_____ 10. P(B)

_____ 11. P(B)'

_____ 12. P(A ∪ B)

_____ 13. P(A ∩ 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 ∪ S)

_____ 17. P(I ∩ S)

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

Coolest 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(Chocolate)

_____ 19. P(Chocolate)'

_____ 20. P(Sprinkles ∩ Cookie Dough)

_____ 21. P(Caramel ∪ Vanilla)