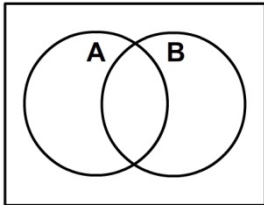


Name: \_\_\_\_\_

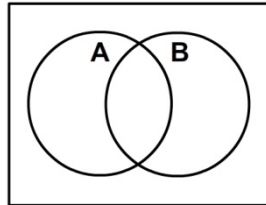
### SM2 Unit 10 Extra Practice

**10.1-** For questions 1 to 9, shade the area on the Venn Diagram that represents the given events.

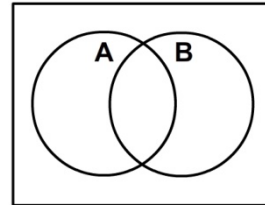
1. Event:  $S$



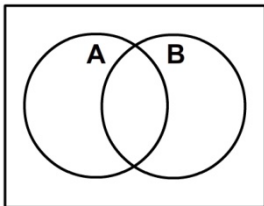
2. Event:  $A \cap B$



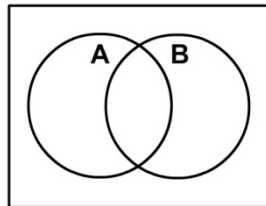
3. Event:  $A \cup B$



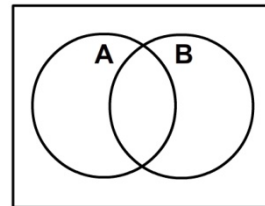
4. Event:  $A^c$



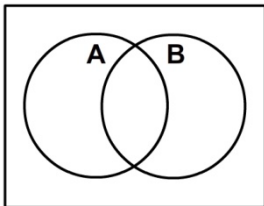
5. Event:  $B \cup A^c$



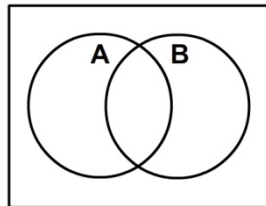
6. Event:  $A \cap B^c$



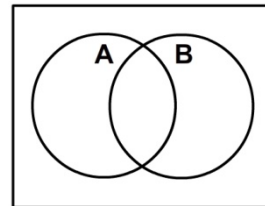
7. Event:  $\sim(A \cap B)$



8. Event:  $A^c \cap B^c$



9. Event:  $\sim(A^c \cap \sim B)$



For questions 10 to 12, use the Venn diagram to the right.

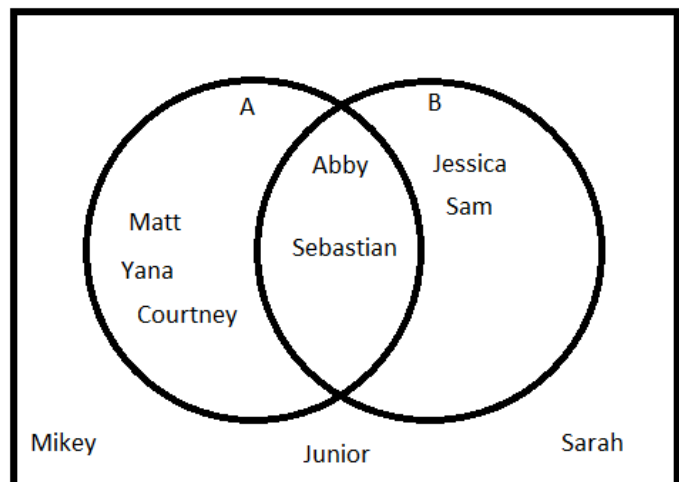
Event A is the subset of students that love taking math classes.

Event B is the subset of students that love taking physics classes.

10. Which students make up the event:  $A \cup B$  ?

11. Which students make up the event:  $\sim A$  ?

12. Which students make up the event:  $A \cap B^c$  ?



**10.2 & 10.3-** Mr. Coxson keeps his whiteboard markers in a box on his desk. The box contains 20 black markers, 8 blue markers, 5 green markers, 7 red markers. Mr. Coxson draws out 1 marker and then without putting it back, he takes a second marker.

13. What is the probability that Mr. Coxson selected 2 black markers?

14. What is the probability that Mr. Coxson selected 1 black and then 1 green marker?

15. What is the probability that Mr. Coxson selected 1 red marker and then 1 gray marker?

16. What is the probability that Mr. Coxson selected 2 markers that are the same color?

**10.2 & 10.3 & 10.4-** Students are randomly surveyed at Orem High School to see if they ride the bus, come in a car, or walk to school each morning. The table below shows the students responses.

Fill out the rest of the table and use the table data to find the probability of the events for questions 18 to 22.

	Bus	Car	Walk	Total
Male	146	166	82	
Female	154	185	64	
Total				797

17.  $P(\text{Bus})$

20.  $P(\text{Male} \cap \text{Bus})$

18.  $P(\text{Car} \cap \text{Walk})$

21.  $P(\text{Walk} \mid \text{Female})$

19.  $P(\text{Male} \mid \text{Bus})$

22.  $P(\text{Male} \mid \text{Don't Walk})$

### 10.5- Permutations & Combinations

23. If Cindy, Sam, Jordan, Mike, Jason, Scott, and Kevin are on a scavenger hunt for 4 pieces of jewelry, 5 pieces of wood, a toy car, a ball of string, and a 3 pairs of socks. How many distinct ways can the first, second, and third place winners be determined?

24. A small pizzeria offers 17 vegetarian toppings and 8 meat toppings from which customers can choose.

a) If you wanted to order a pizza with 5 toppings, how many different orders could you place?

b) If you wanted to order a pizza with three or four toppings, how many different orders could you place?

**Mixed-** Students at OHS were asked which of 3 singers they like the most. Their replies are listed in the following table:

	Justin Bieber	Taylor Swift	Katy Perry	Total
Sophomore	167	92	123	
Junior	159	103	130	
Senior	156	89	115	
Total				

25. Find the probability that a randomly selected junior would choose *Taylor Swift*.

26. Find the probability that a randomly selected senior would choose *Taylor Swift*.

27. Is a randomly selected junior more likely to enjoy *Taylor Swift* than a randomly selected senior?