Secondary 2H **Name**_____ **Desk** _____

Unit 7 **HW: Set Notation and Sample Space**

Score _____

Given the sample space $S = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$ with the event $A = \{3, 4, 5, 6, 7\}$ and the event $B = \{1, 2, 3, 4, 5\}$.

1. List all the outcomes for $A \cap B$.

2. List all the outcomes for $A \cup B$.

3. List all the outcomes for A^c.

4. List the sample space S for the days of the week.

   a. List a subset of days of the work week, W.

   b. List a subset of days of the weekend, E.

   c. Find the union of the subsets.

   d. Find the intersection of the subsets.

   e. What do you notice about the intersection?

5. Define a sample space in your worn words. (It must be in complete sentences).

6. List the sample space A for months of in the year.

Given the event of choosing a letter from the alphabet.

7. List the sample space.

8. List a subset of the letters in your first name.

9. List a subset of the letters in your last name.

10. Find the union of the subsets of your first name and last name.

11. Find the intersection of the subsets of your first name and last name.

Given a standard deck of cards, event A is defined as a red card and event B is defined as a diamond.

12. List all the outcomes for $A \cap B$.

13. List all the outcomes for $A \cup B$.

14. What is $\sim A$?

15. What is $A \cap A^c$?

Given the sample space $S = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$ with event $A = \{odd\ numbers\}$ and event $B = \{1, 2, 3, 4, 5\}$.

16. Draw a Venn diagram representing the sample space with events A and B.

17. List all the outcomes for $A \cap B$.

18. List all the outcomes for $A \cup B$.

19. List all the outcomes for A^c.

Given the sample space $S = \{Jose, Samantha, Taylor, Angela, John, Luis\}$ representing the students that play soccer and the sample space $B = \{Rick, Luis, Jenn, Ashley, John, Niko\}$ representing the students that play basketball.

20. Write the symbol for the students that play soccer and basketball.

21. Write the symbol for the subset of students that play soccer or basketball.

22. What is $\sim S$?

23. What is $S \cap B^c$?

24. What is $(S \cap B) \cap B^c$?

25. What is $(S \cup B) \cup S$