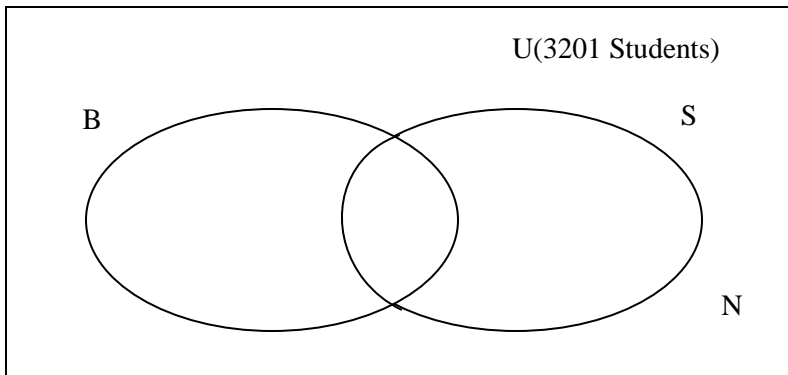


INVESTIGATION – Math 3201 Students and Their Siblings

Ask the class the following questions and determine how many students answer ‘yes’ to each question. Add the information in the Venn diagram.

- a) Do you have at least one brother and no sisters?
- b) Do you have at least one sister and no brothers?
- c) Do you have at least one brother and at least one sister?
- d) Do you have neither a brother nor a sister?



B = # of Students with Brothers

S = # of Students with Sisters

1. What is the **universal set**?

2. List three **subsets** and the number of **elements** in each.

Subset	Number of Elements

3. How many **elements** are in the **complement** of S, (denoted as S^c)?

4. Is B equal to S' ? Explain.

5. Is there an **empty set** for our class? Explain.

6. Name a pair of **disjoint sets**.

7. How many elements are in **B union S** , $B \cup S$? What does it represent?

8. How many elements are in **B intersection S** , $B \cap S$? What does it represent?

9. How many elements are in **B minus S** , $B \setminus S$? What does it represent?

10. How many elements are in $(B \cup S)'$? What does it represent?