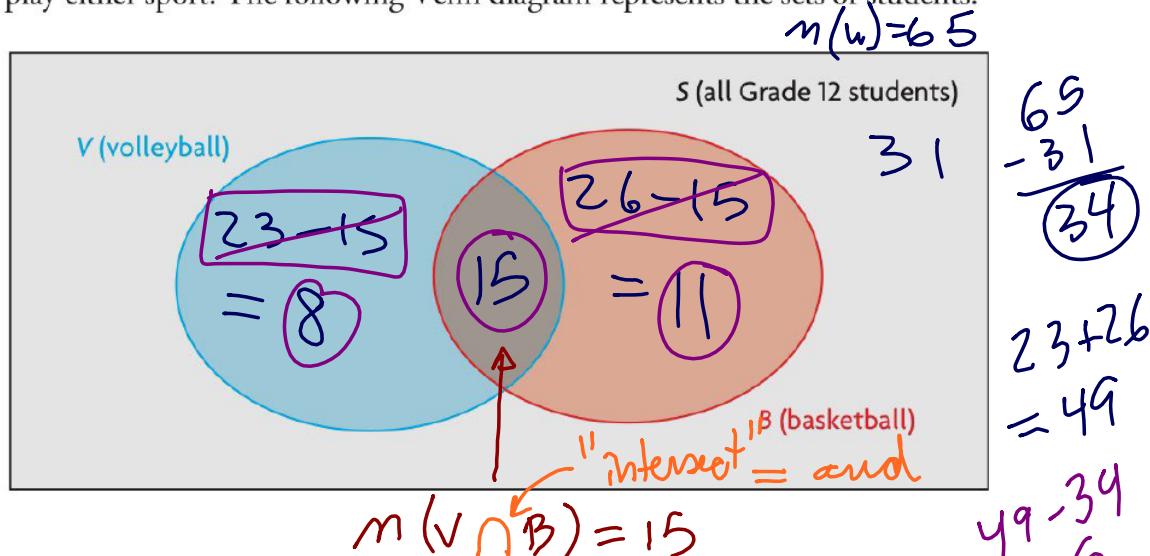


## 3.2 Relationships between sets

### EXPLORE the Math

In an Alberta school, there are 65 Grade 12 students. Of these students, 23 play volleyball and 26 play basketball. There are 31 students who do not play either sport. The following Venn diagram represents the sets of students.



- ?** How can you use this Venn diagram to determine the number of students who play volleyball only, basketball only, and both volleyball and basketball?
- Consider the set of students who play volleyball and the set of students who play basketball. Are these two sets disjoint? Explain how you know.
  - Describe how you solved the problem, including what each area of the Venn diagram represents.
  - Compare your solution to your classmates' solutions. Is there more than one way to solve the problem?

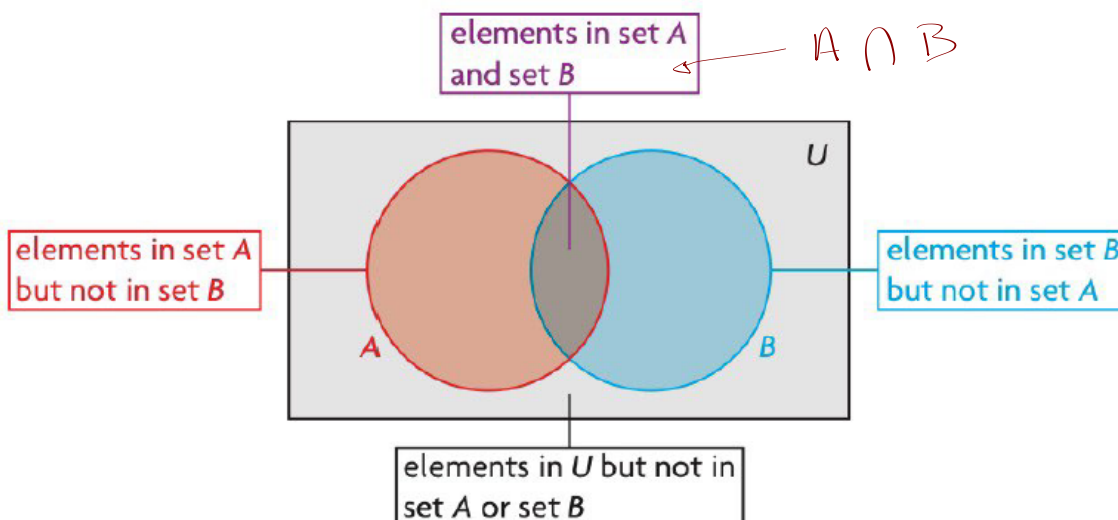
A. no... some volleyballers also play basketball.

B. your answer goes here.

## In Summary

### Key Ideas

- Sets that are not disjoint share common elements.
- Each area of a Venn diagram represents something different.
- When two non-disjoint sets are represented in a Venn diagram, you can count the elements in both sets by counting the elements in **each region of the diagram just once.**



### Need to Know

- Each element in a universal set appears only once in a Venn diagram.
- If an element occurs in more than one set, it is placed in the area of the Venn diagram where the sets overlap.