# Three Rings

**Goals**
- Organize and interpret survey data using three-ring Venn diagrams.
- Use logical reasoning to solve problems.

**Notes**
Suggest to students that they record the total number of responses for each ring category next to the category name. Once they have numbers in all of the regions, they can add the numbers in the rings and check the sums with the category totals. Encourage students to begin with the region shared by all three rings and then consider regions that are shared by pairs of rings.
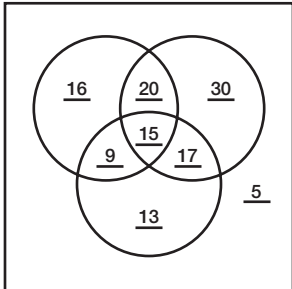
**Solutions to all problems in this set appear on page 31.**

**Three Rings 1**

**Questions to Ask**
- How many people said all three types of books? (15) In which region will you write 15? (Region E)
- How many people said mystery books? (54) Which regions give a total of 54 people who like mystery books? (Regions D, E, F, and G)
- What does Region C represent? (the number of people who like history books but do not like nature or mystery books)
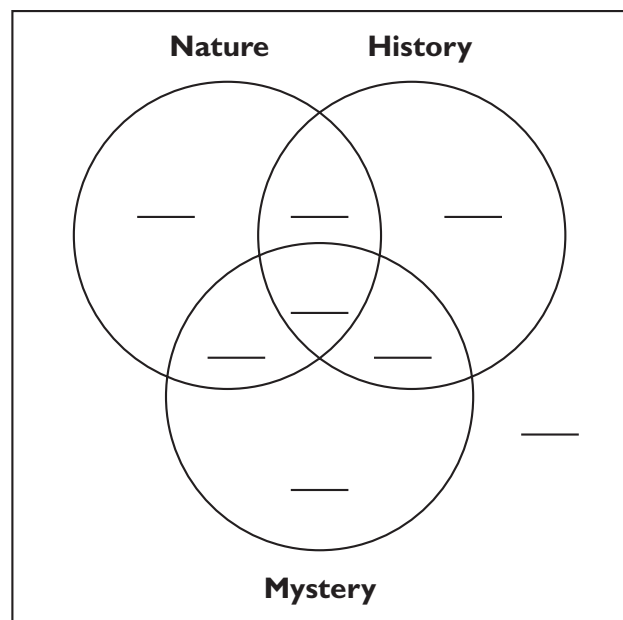- What is the sum of the numbers of people in Regions A through H? (125)

**Solutions**

1.



2. 16
3. 13
4. 20
5. 5

# Three Rings ⟨1⟩

Samantha asked 125 people, "What is your favorite type of book?"

1. Use the responses shown to fill in the number of people in each region of the Venn diagram.

| 125 People Responded |
|---|
| 15 said all three types of books |
| 60 said nature books |
| 54 said mystery books |
| 82 said history books |
| 35 said nature and history books |
| 24 said nature and mystery books |
| 32 said mystery and history books |



2. How many people said only nature books? _____

3. How many people said only mystery books? _____

4. How many people said nature and history but not mystery books? _____

5. How many people did not like any of the three types of books? _____