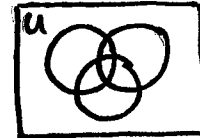Name _____

Date _____

Period _____
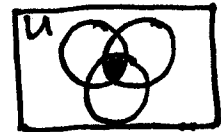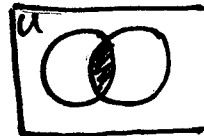
The Venn Diagram: Intro

Venn Diagrams help to describe and compare any number of elements and characteristics (usually just 2 or 3) of items, such as: events, people, situations, wants, needs, ideas and concepts in the form of overlapping circles.
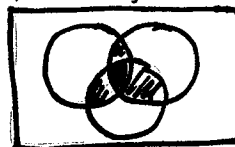
To make a Venn Diagram:

- Assign each element a circle. Draw a rectangle around your circles and put a U in the top left corner to represent the "universal" set. This would be the complete set of elements for the problem.

- Start by looking at what is common to all the items. That number will go in the overlapping area of the Venn Diagram.

- Next, put the numbers in of any other common items. These may not be common to all the sections, but may be common to only 2 out of the 3.
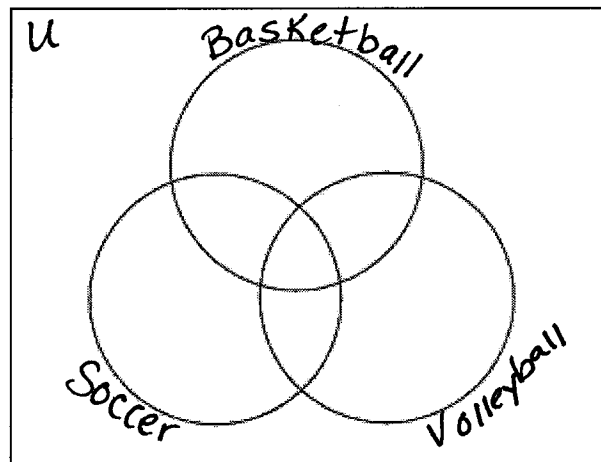
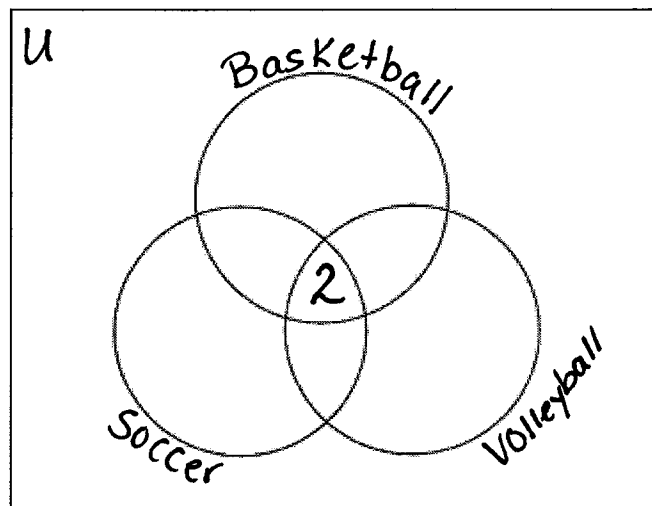- Remember to subtract the common areas from the numbers given.

1

Let's do one:

Of the seventh graders at Bermuda Middle School, 7 played basketball, 9 played volleyball, 10 played soccer, 3 played basketball and volleyball, 3 played basketball and soccer, 4 played volleyball and soccer and 2 played volleyball, basketball and soccer. There are a total of 25 seventh graders that attend Bermuda Middle School.
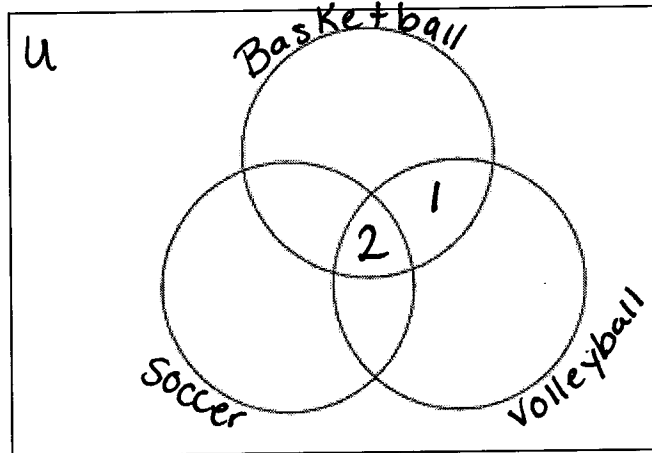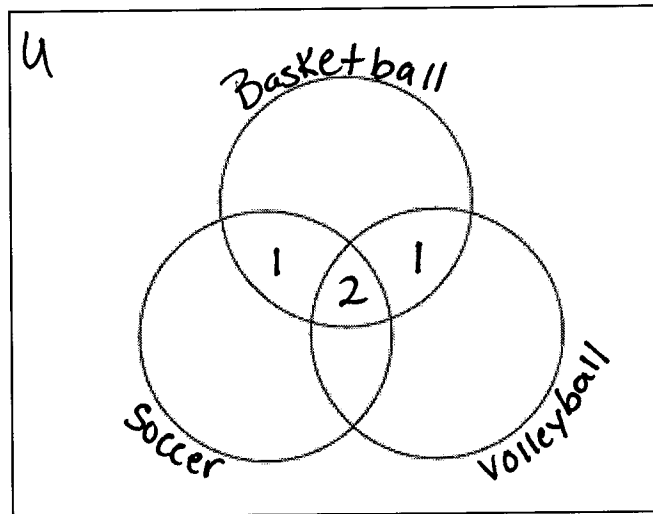
➢ Start by assigning each element a circle.

➢ Next let's fill in the most common number – the area that shows students who played all 3 sports. Let's put a 2 in that very center area.
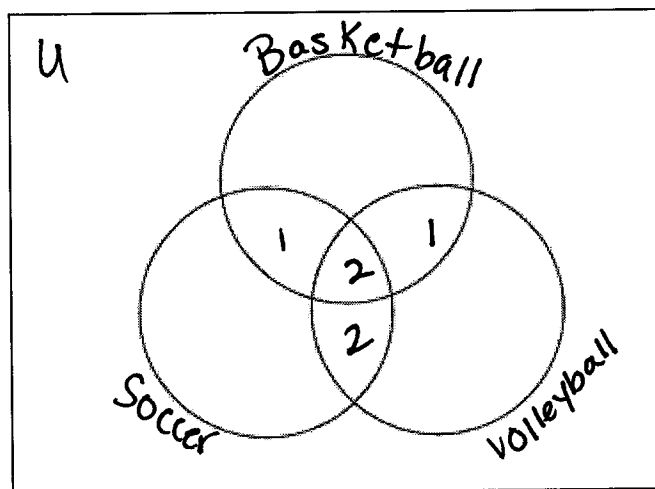
➢ Since we know that 3 play basketball and volleyball then 3-2 = 1 for the common area between basketball and volleyball.

U — Basketball / Soccer / Volleyball — (regions: 2, 1)

➢ Since we know that 3 play basketball and soccer, then 3-2 = 1 for the area between basketball and soccer.

U — Basketball / Soccer / Volleyball — (regions: 1, 2, 1)

➢ Since we know that 4 play volleyball and soccer, then 4-2 = 2 for the area between volleyball and soccer.

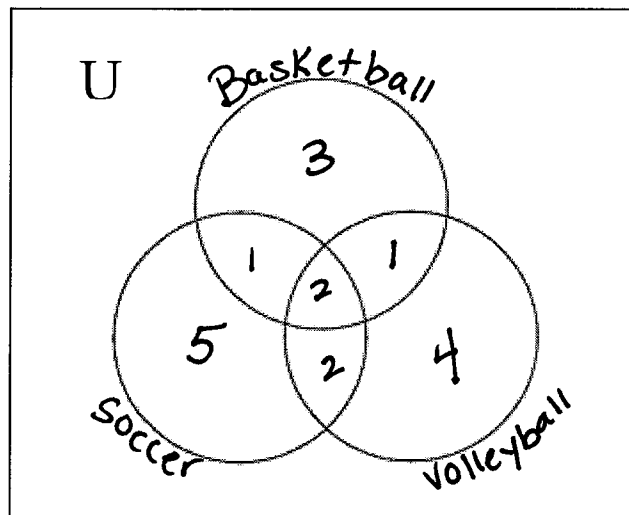U — Basketball / Soccer / Volleyball — (regions: 1, 2, 1, 2)

➤ **SO**: If 7 play basketball, then 7-4 = 3 for basketball.
  If 9 play volleyball, then 9-5 = 4 for volleyball.
  If 10 play soccer, then 10-5 = 5 for soccer.

➤ **NOW**: Add them all together:

$$3 + 4 + 5 + 1 + 2 + 2 + 1 = 18$$

If 25 students attend the school, then 25 -18 = 7, so 7 sits outside the circles to represent the number of students who do not play any sports.

QUESTIONS:

Discuss these questions with your group members and write your answers here.

    a) What are some words that are often used with Venn Diagrams?

    b) What does the U stand for?

    c) Why is the 7 outside of the circles?

    d) Explain how you know that 9 students play volleyball just by looking at the Venn Diagram.