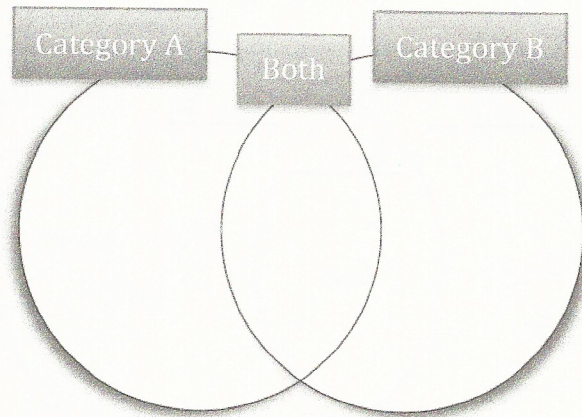


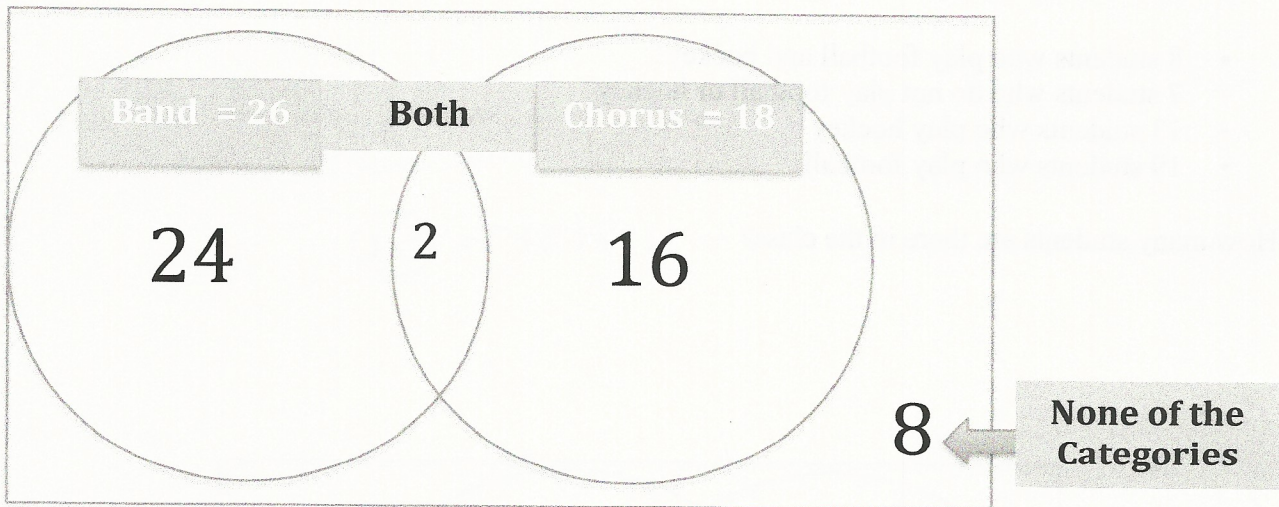
Name: Solution Key

Date: _____

Venn Diagram



Example 1: In a class of 50 students, 18 take Chorus, 26 take Band, and 2 take both Chorus and Band. How many students in the class are not enrolled in either Chorus or Band? **8 students**



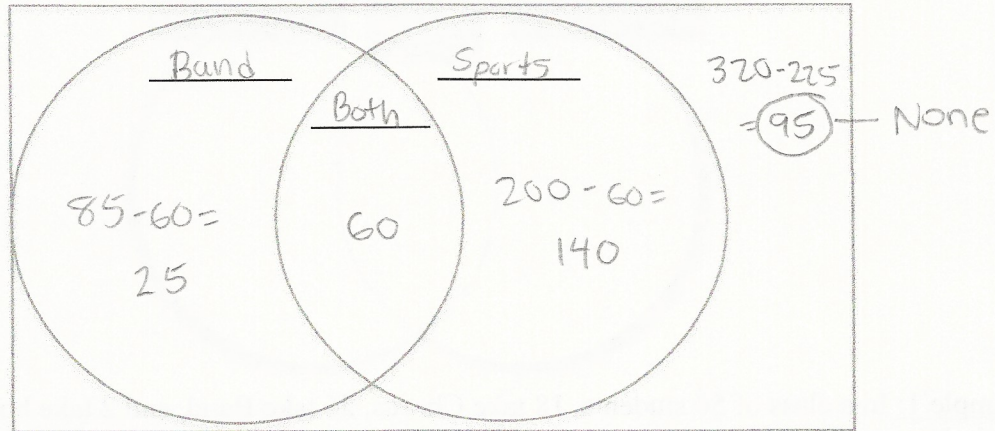
Steps for Solving Venn Diagram Problems

1. Label the Categories for each circle.
2. Determine how many students for each circle.
3. Answer the question. 😊

Problem Set: Draw a Venn Diagram for each problem.

1. In a school of 320 students, 85 students are in the band, 200 students are on sports teams, and 60 students participate in both activities. How many students are not involved in either band or sports? - 95

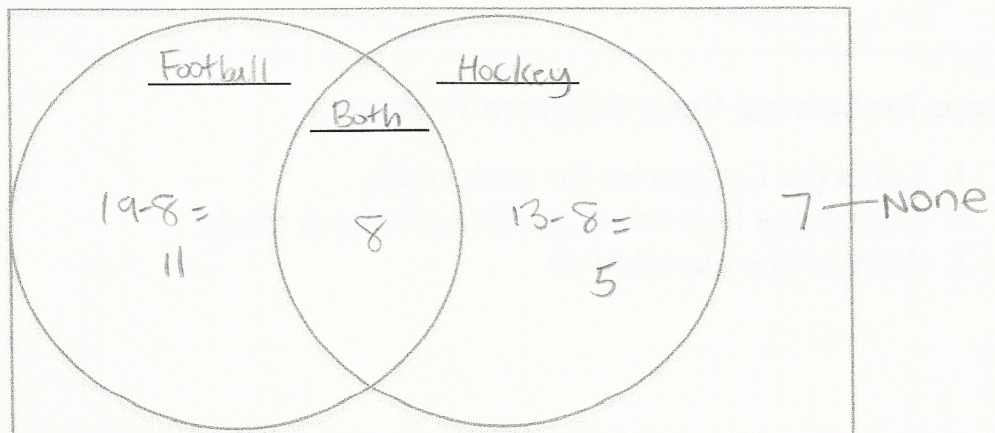
$$25 + 60 + 140 = 225$$



2. In a class there are:

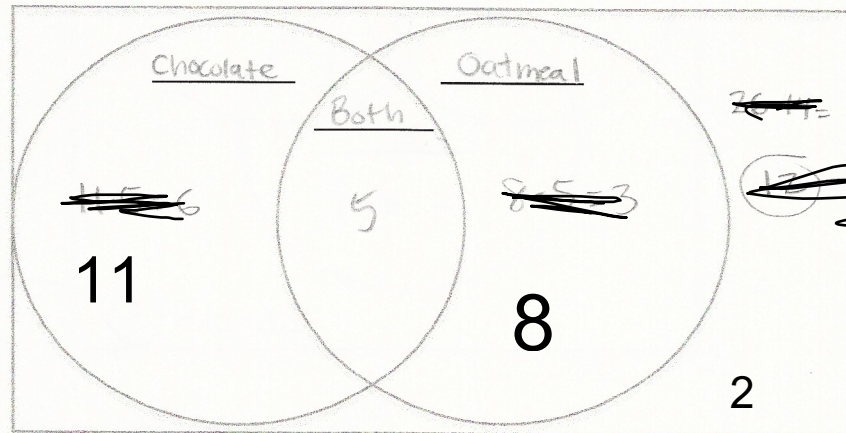
- 8 students who play football and hockey
- 7 students who do not play football or hockey
- 13 students who play hockey
- 19 students who play football

How many students are there in the class? - $11 + 8 + 5 + 7 = 31$



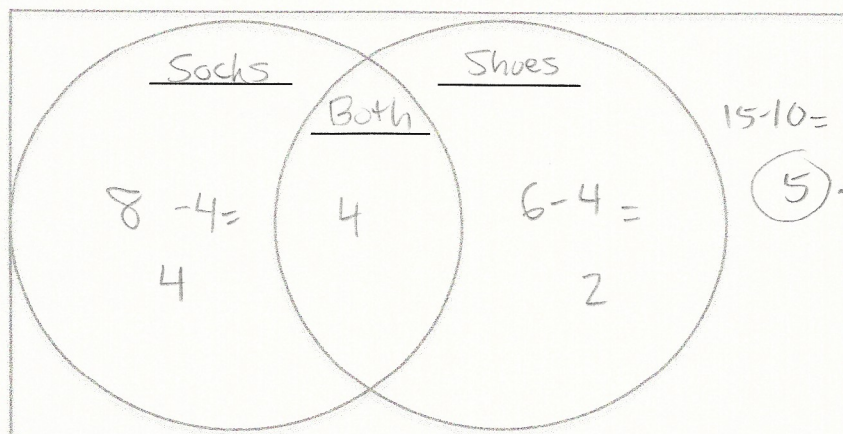
3. There are 26 kids on the soccer team. After the game, 11 kids eat only chocolate chip cookies and 8 kids eat only oatmeal cookies. If 5 kids ate both types of cookies but were not counted in the tallies for chocolate chip or oatmeal, then how many kids did not eat any cookies? ~~12~~

$$26 - (11 + 5 + 8) = 2$$



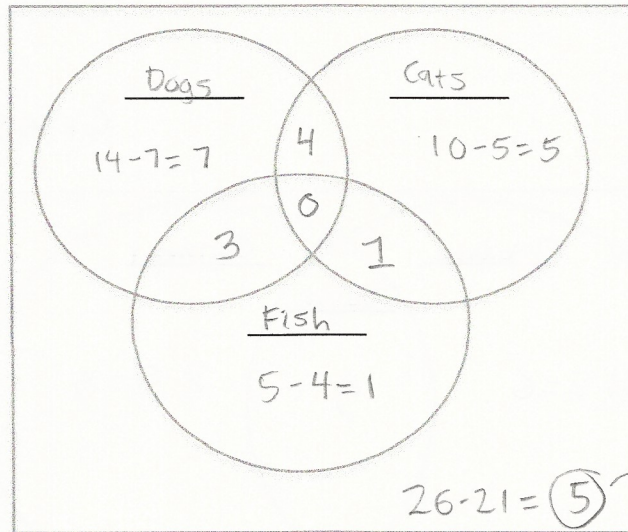
~~none/~~
~~did not have~~
~~any cookies~~

4. There are 15 students in the room. 8 are wearing socks, 6 are wearing shoes, and 4 are wearing both. How many people have bare feet? - ~~5~~



none/
bare feet

5. A veterinarian surveys 26 of his patrons. He discovers that 14 have dogs, 10 have cats, and 5 have fish. 4 patrons have dogs and cats, 3 have dogs and fish, and 1 has a cat and fish. If no one has all three kinds of pets, how many patrons have none of these pets? **5**



$$(7+5+1) + (4+3+1) + 0 = 13 + 8 = 21$$

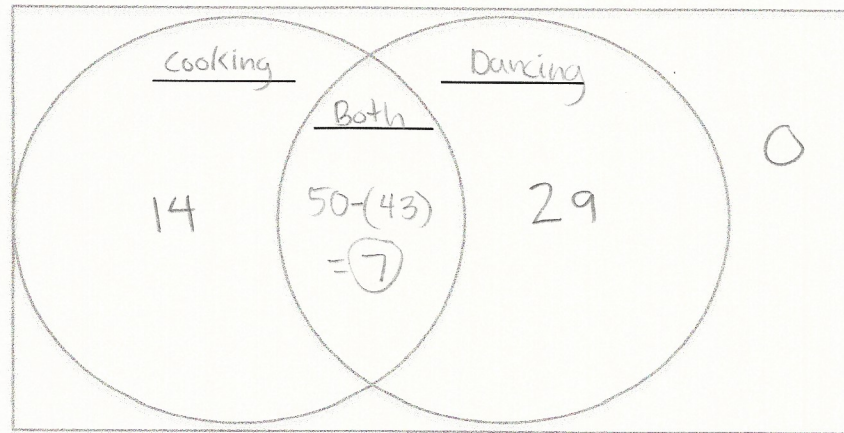
MATH CHALLENGE!

6. 50 students at Maui Elementary School either enroll in cooking or dance class or both. 14 of them take only cooking class, and 29 take only dance class.
- a. How many students take both classes?

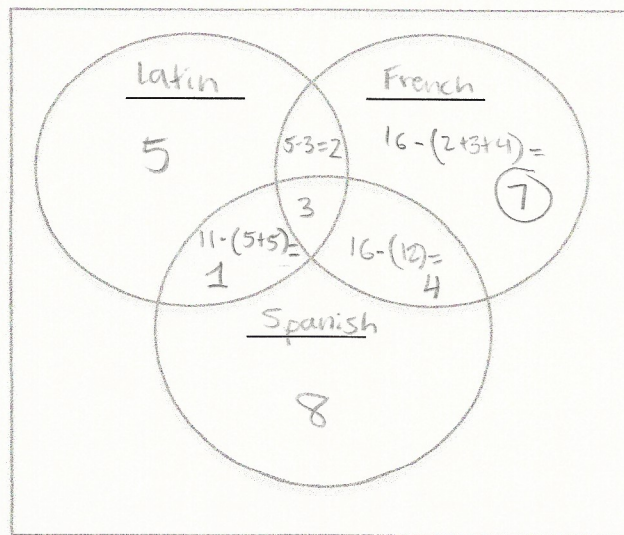
$$50 - (14 + 29) = 50 - 43 = 7$$

- b. What is the probability that a randomly-chosen student from this group is taking only cooking class?

$$\frac{14}{50} = \frac{7}{25}$$



7. A guidance counselor is planning schedules for 30 students. Sixteen students say they want to take French, 16 want to take Spanish, and 11 want to take Latin. Five say they want to take both French and Latin, and of these, 3 wanted to take Spanish as well. Five want only Latin, and 8 want only Spanish. How many students want French only? - 7



$$(5 + 7 + 8) + (2 + 1 + 4) + 3 = 30 \checkmark$$