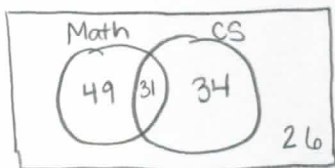
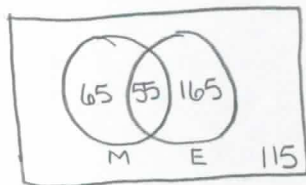


1. In a class of 140 students, 80 are taking math, 65 are taking computer science, and 31 are taking both.
a. Draw a Venn diagram that represents the situation.



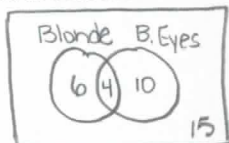
- b. $P(\text{not taking math}) = \frac{60}{140} = \frac{3}{7}$
 c. $P(\text{taking math but not computer science}) = \frac{49}{140} = \frac{7}{20}$
 d. $P(\text{taking neither math nor computer science}) = \frac{26}{140} = \frac{13}{70}$
 e. $P(\text{taking math} \mid \text{taking computer science}) = \frac{31}{65}$

2. Of 400 college students, 120 are enrolled in math, 220 are enrolled in English, and 55 are enrolled in both.
a. Draw a Venn diagram that represents the situation.



- b. $P(\text{enrolled math}) = \frac{120}{400} = \frac{3}{10}$
 c. $P(\text{enrolled math or English}) = \frac{285}{400} = \frac{57}{80}$
 d. $P(\text{enrolled either math or English but not both}) = \frac{230}{400} = \frac{23}{40}$

3. In a group of 35 children, 10 have blonde hair, 14 have brown eyes, and 4 have both blonde hair and brown eyes.
If a child is selected at random, find the probability the child has blonde hair or brown eyes.

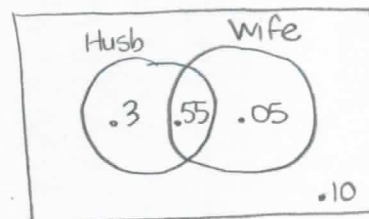


$$\frac{20}{35} = \frac{4}{7}$$

4. A survey of couples in a city found the following data: the probability that the husband is employed is .85, the probability that the wife is employed is .60, the probability they are both employed is .55.

- a. $P(\text{at least one of them is employed}) = 90\%$

- b. $P(\text{neither is employed}) = 10\%$



5. At Pascal High School, 54% of the students are girls and 62% of the students play sports. Half of the girls at the school play sports.

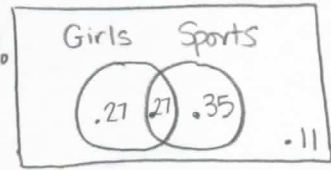
a. What percentage of the students who play sports are boys?

$P(\text{boy} | \text{play sports})$

b. $P(\text{boy who does not play sports})$

11%

$$\frac{35\%}{62\%} = 56.5\%$$



6. There are 150 children at summer camp, and 71 signed up for swimming. A total of 62 children signed up for canoeing, and 28 of them also signed up for swimming.

a. Construct a contingency table summarizing the data.

		canoe		
		Yes	No	
Swim	Yes	28	43	71
	No	34	45	79
		62	88	150

b. $P(\text{not swimming} | \text{canoeing}) = \frac{34}{62} \rightarrow \frac{17}{31}$

c. $P(\text{not canoeing} | \text{swimming})$

$$\frac{43}{71}$$

7. At a movie theater, Claire counted how many of the 105 people had popcorn and how many had a drink. She found that out of 84 people who had popcorn, only 10 did not have a drink. Six people walked in without popcorn or a drink.

a. Construct a contingency table to summarize the data.

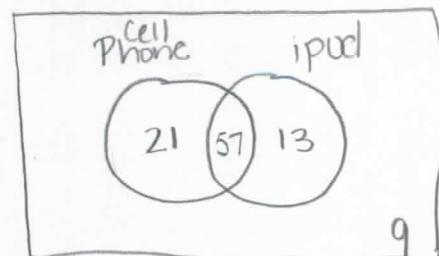
		Popcorn		
		Yes	No	
Drink	Yes	74	15	89
	No	10	6	16
		84	21	105

b. $P(\text{drink}) = \frac{89}{105}$

c. $P(\text{popcorn} | \text{drink}) = \frac{74}{89}$

8. Mary surveyed students at her school. She found that 78 students own a cell phone and 57 of those students own an iPod. There are 13 students who do not own a cell phone but own an iPod. Nine students do not own either device.

a. Construct a contingency table summarizing the data.



b. $P(\text{cell phone}) = 78\%$

c. $P(\text{iPod} | \text{cell phone}) = \frac{57}{78} = \frac{19}{26} = 73.1\%$