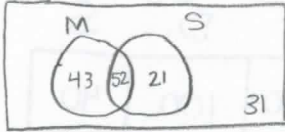


1) In a class of 147 students, 95 are taking math, 73 are taking science, and 52 are taking both. Draw a Venn Diagram and find each probability if one student is picked at random.

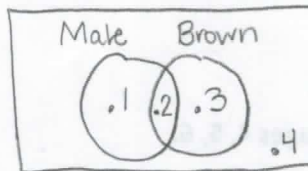


a. $P(\text{not taking math}) = \frac{52}{147} =$

b. $P(\text{taking math but not science}) = \frac{43}{147}$

c. $P(\text{taking neither math nor science}) = \frac{31}{147}$

2) In a class:
 $P(\text{male}) = 0.30$
 $P(\text{brown hair}) = 0.50$
 $P(\text{male with brown hair}) = 0.20$



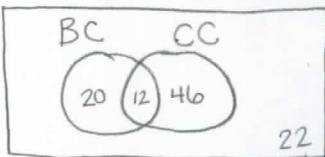
Draw a Venn Diagram and find each probability if one student is picked at random.

a. $P(\text{female}) = .7$

b. $P(\text{male} | \text{brown hair}) = \frac{.2}{.5} = .4$

c. $P(\text{female} | \text{doesn't have brown hair}) = \frac{.4}{.5} = .8$

3. Freezy's Ice Cream Stand is testing out two new flavors, Birthday Cake and Dandy Cotton Candy. A poll conducted by Freezy's showed that 32 customers liked Birthday Cake, 58 customers liked Dandy Cotton Candy, 12 liked both flavors, and 22 liked neither flavor.



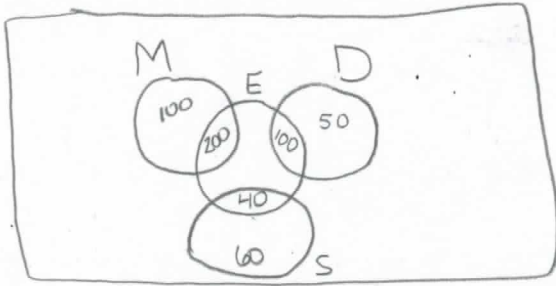
a. What is the probability that a customer selected at random would like Dandy Cotton Candy? $\frac{58}{100} = \frac{29}{50} = .58$

b. What is the probability that a customer selected at random would like either Birthday Cake or Dandy Cotton Candy?

$$\frac{78}{100} = .78$$

Two Way Table

4. A study of consumer exercising habits includes 300 married people (200 of whom exercise regularly), 150 divorced people (100 of whom exercise regularly), and 100 who never married (40 of whom exercise regularly).



	M	D	S	
Exer.	200	100	40	340
Don't	100	50	60	210
	300	150	100	

a. $P(\text{married} \mid \text{exercise regularly}) = \frac{200}{340} = \frac{10}{17}$

b. $P(\text{doesn't exercise regularly} \mid \text{never married}) = \frac{60}{100} = \frac{3}{5}$

5. There are a total of 96 children of ages 4, 5, 6.

- 37 of these children cannot swim.
- 11 four-year olds cannot swim.
- 21 five-year olds can swim.
- There are 30 six-year olds, 18 can swim.

	4	5	6	
Swim	20	21	18	59
Can't swim	11	14	12	37
	31	35	30	96

a. $P(\text{can swim}) = \frac{59}{96}$

b. $P(\text{four-year old} \mid \text{can't swim}) = \frac{11}{37}$

c. $P(\text{can swim} \mid \text{six-year old}) = \frac{18}{30} = \frac{3}{5}$