

AGS2
Probability Final

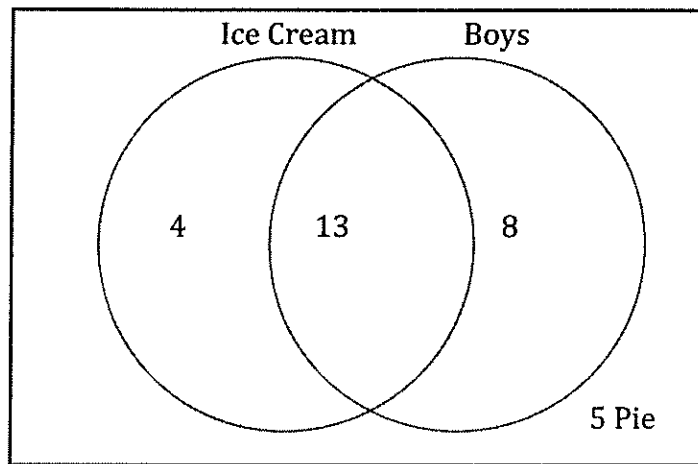
Name _____

Date _____

LT 1: Communication	LT 1	LT 2	LT 6
LT 2: Patterns/Modeling			
LT 6: Probability			

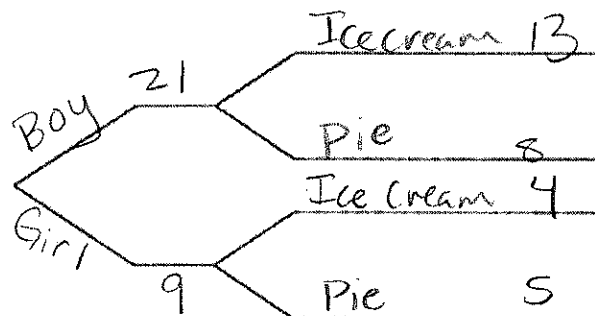
1. Use the Venn diagram below to fill in the other diagram and answer the problems below.

Matt and Kya are doing a survey about their favorite deserts with their classmates. They wanted to know what girls and boys like for their desert. The information they found is displayed below:



a) Complete the two-way table and the tree table below

	IC	Pie	Total
Boys	13	8	21
Girls	4	5	9
Total	17	13	30



\cap = and \cup = or $|$ = given

AGS2
Probability Final

Using the information from the previous problem, answer the following questions using correct probability notation:

b) What is the probability that a person's favorite desert is pie?

$$P(\text{Pie}) = \frac{13}{30}$$

c) What is the probability that a randomly chosen student is boy and his favorite desert is pie?

$$P(\text{Boy} \cap \text{Pie}) = \frac{8}{30}$$

d) What is the probability that a randomly chosen student is a girl or the favorite desert is pie?

$$P(\text{Girl} \cup \text{Pie}) = \frac{17}{30}$$

e) What is the probability that a student is boy, given that his favorite desert is ice cream?

$$P(\text{Boy} | \text{Ice Cream}) = \frac{13}{17}$$

out of 13

2. Please say whether the situations below are independent events or dependent events. Explain your reasoning.

a) Pulling a marble out of a bag, throwing it over your shoulder, then grabbing a second marble. *Dependent*

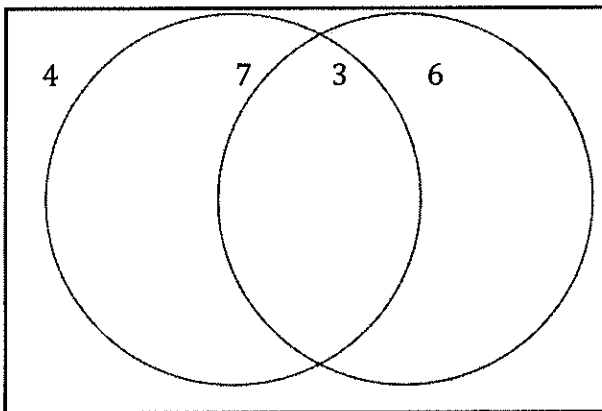
b) Spinning a spinner and pulling a card out of a deck. *Independent*

c) Pulling a marble out of a bag, putting it back in the bag, then grabbing a second marble. *Independent*

3.

Event A

Event B



a) How many total outcomes are possible?

$$20$$

b) $P(A) = \frac{10}{20}$

c) $P(B) = \frac{9}{20}$

d) $P(A \cap B) = \frac{3}{20}$

e) $P(A \cup B) = \frac{16}{20}$

f) $P(A | B) = \frac{3}{9}$

g) Are the events A and B independent events? Why or why not?

$$P(A|B) = P(A)$$

$$\frac{3}{9} \neq \frac{10}{20}$$

Not Independent

$$P(A|B) \neq P(A)$$

Probability Final

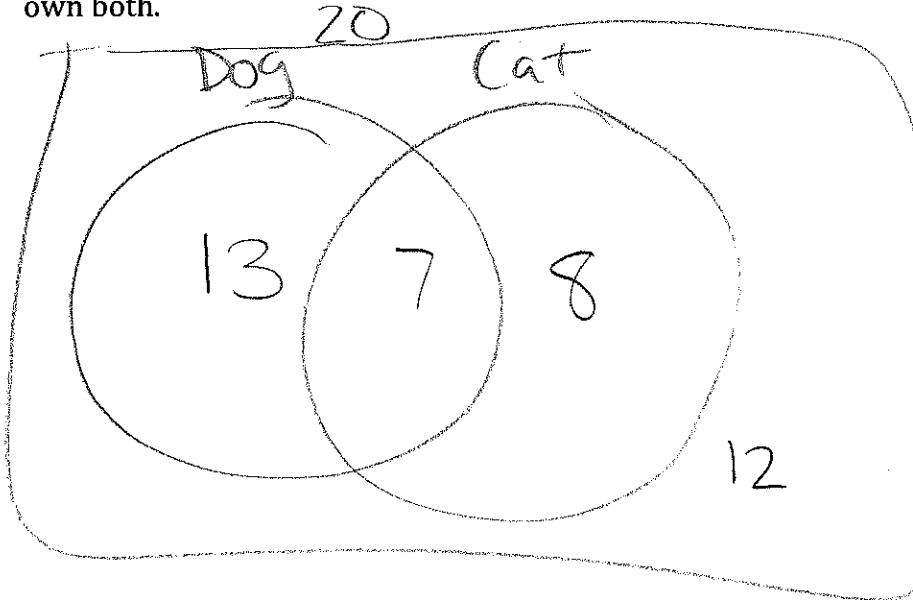
4. Below you have several different representations for the same group of data about whether students or teachers would prefer Classical or Rap music. Fill in ALL of the blanks where information should go.

Notation	2-way Table																
<p>Key:</p> <p>Student = S Teacher = T</p> <p>Rap = R Classical = C</p> <p>Sample size =</p> <p>$P(R) = 45\%$ $P(C S) = \frac{300}{380}$</p> <p>$P(R \cap T) = \frac{370}{1000}$ $P(C T) = \frac{250}{620}$</p> <p>$P(S \cup C) = \frac{630}{1000}$</p>	<table border="1"> <thead> <tr> <th></th> <th>Classical</th> <th>Rap</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Student</td> <td>300</td> <td>80</td> <td>380</td> </tr> <tr> <td>Teacher</td> <td>250</td> <td>370</td> <td>620</td> </tr> <tr> <td>Total</td> <td>550</td> <td>450</td> <td>1000</td> </tr> </tbody> </table>		Classical	Rap	Total	Student	300	80	380	Teacher	250	370	620	Total	550	450	1000
	Classical	Rap	Total														
Student	300	80	380														
Teacher	250	370	620														
Total	550	450	1000														
Venn Diagram	Tree Diagram																

AGS2
Probability Final

5. Pick one (Venn diagram, tree diagram, two-way table) to represent the following information:

Out of 40 students, 50% of students own dogs, 15 students own cats, and 7 students own both.



	Cat	NOcat	Total
Dog	7	13	20
NO Dog	8	12	20
Total	15	25	40

