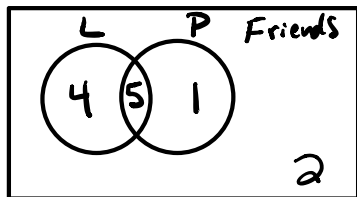# Venn Diagrams

Notes Section P.1 and P.3

House Party

You are having dinner guests with 12 of your closest friends. As the host you serve lasagna and pumpkin pie. Nine of your friends eat lasagna, 6 of your friends eat pumpkin pie and 2 ate nothing

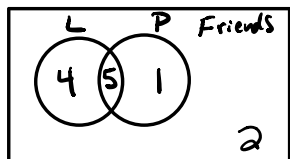P.1: Show the sample space of this dinner party.

L   P   Friends

4 (5) 1

2

P.1: If you choose a friend at random, what is the chance the friend ate lasagna only?

$$P(L \ only) = \frac{\# \ of \ people \ at \ L \ only}{total \ \# \ of \ people}$$

$$= \frac{4}{12}$$

$$= \frac{1}{3}$$

P.3: Find the probability of choosing a person that ate lasagna given that they ate pie.

L   P   Friends

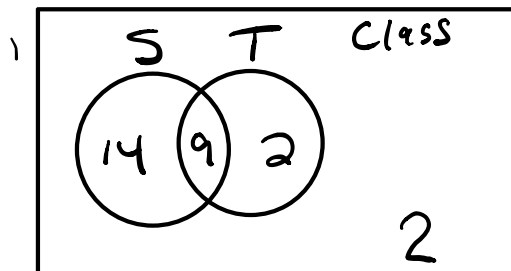4 (5) 1

2

$$P(L|P) = \frac{5}{6}$$

P.3: Find the chance of choosing someone who ate pie given that the person ate lasagna.

$$P(P|L) = \frac{5}{9}$$

Sporting a Twinkie

There are 27 students in Geometry class. Of these students, 23 play a sport and 11 ride the bus to school on most days and 2 don't play a sport and don't ride the bus to school.
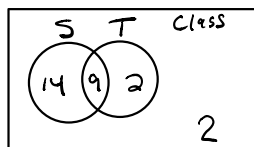
P.1: Show the sample space

S   T   Class

14 (9) 2

2

P.1: If you choose a student at random, what is the chance the student rides the bus to school and plays a sport for the school?

$$P(S \ and \ T) = \frac{\#Favorable}{\# \ total}$$

$$P(S \wedge T) = \frac{9}{27}$$

$$= \frac{1}{3}$$

P.3: Find the chances of choosing a person who plays a sport under the condition that the person rides the bus.

$$P(S|T) = \frac{9}{11}$$

S   T   Class

14 (9) 2

2

P.3: Find the chances of choosing a person who rides the bus under the condition that the person plays a sport.

$$P(T|S) = \frac{9}{23}$$