

Name:

#:

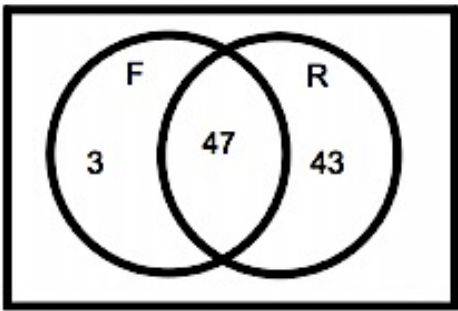

/10

HOMEWORK 9.4/9.5

Secondary Math II

1. Complete the probabilities and fill in the diagrams. (Use the Venn Diagram to fill in the others)

Notation	2-way Table																
<p>Key: Male = M Female = F Lefty = L Righty = R</p> <p>Sample size = 100 people</p> <p>P(L) = P(M) =</p> <p>P(F) = P(L F) =</p> <p>P(L M) =</p>	<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 20%;">Lefty</th> <th style="width: 20%;">Righty</th> <th style="width: 20%;">Total</th> </tr> </thead> <tbody> <tr> <td>Male</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Female</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Lefty	Righty	Total	Male				Female				Total			
	Lefty	Righty	Total														
Male																	
Female																	
Total																	

Venn Diagram	Tree Diagram
	

Write three conditional statements regarding this data.

2. Complete the table about eye color and write three conditional probability statements.

	Blue	Green	Brown	Other	Total
Male	55	20	15		100
Female		20		10	
Total			75		230

Probability statements:

	Survived	Did not survive	Total
Men	146	659	805
Women	296	106	402
Total	442	765	1207

3. Use the table above to complete the following probabilities. (m=men, w=women, s=survive, ns=did not survive)

a) $P(w) =$

b) $P(s) =$

c) $P(s|w) =$

d) $P(w \cup s) =$

e) $P(w \cup m) =$

f) $P(ns|w) =$

g) $P(m \cap ns) =$

Two events (A and B) are independent if:

- $P(A \text{ and } B) = P(A) \cdot P(B)$
- $P(A|B) = \frac{P(A \text{ and } B)}{P(B)} = P(A)$

Use these two formulas to determine if the events are independent.

4.

$$P(A \text{ and } B) = \frac{3}{5}$$

$$P(A) = \frac{1}{2}$$

$$P(B) = \frac{3}{10}$$

5.

$$P(A \text{ and } B) = \frac{1}{6}$$

$$P(A) = \frac{1}{5}$$

$$P(B) = \frac{1}{3}$$

6.

$$P(A \text{ and } B) = \frac{1}{5}$$

$$P(A) = \frac{1}{2}$$

$$P(B) = \frac{2}{5}$$

Answers:

$$1. P(L) = \frac{10}{100} = \frac{1}{10} = 0.1$$

$$P(L|M) = \frac{7}{50} = 0.14$$

Don't forget to write three statements

$$3. a) P(w) = \frac{402}{1207} = 0.33$$

$$d) P(w \cup s) = \frac{296}{1207} = 0.25$$

$$g) P(m \cap ns) = \frac{911}{1207} = 0.75$$

4. Not independent

5. Not independent

6. Independent