

Name: \_\_\_\_\_  
 Teacher: \_\_\_\_\_  
 Class/ Block: \_\_\_\_\_  
 Date: \_\_\_\_\_

**Venn Diagrams**

Please answer each question. Clearly identify your final answer!!  
 No work or explanation = No Credit

<p>1. 27 people were surveyed about their choice of running shoes. The survey finds that 13 people have New Balance, 8 have Asics, and 6 have Brooks. Five have New Balance and Asics, 3 have New Balance and Brooks, and one has an Asics and a Brooks. If no one has all three kinds of shoes, find the following:</p> <p>A. Find <math>P(\text{New Balance} \mid \text{Asics})</math>.        B. Find <math>P(\text{New Balance} \mid \text{No Brooks})</math>.        C. Find <math>P(\text{Asics or Brooks})</math>.</p>	
<p>2. A survey was conducted using 59 junior students at South Cobb pertaining to the type of computer they owned. 35 students owned a desktop whereas 26 students owned a laptop. 17 students owned both. Find the following:</p> <p>A. <math>P(\text{Own both computers})</math>.        B. Find <math>P(\text{desktop} \mid \text{don't own a laptop})</math>.        C. Find <math>P(\text{own desktop or laptop})</math>.</p>	
<p>3. A pizza place surveyed 100 customers to determine their favorite pizza topping or combination of toppings. 33 customers liked mushrooms, 39 liked sausage, and 52 liked pepperoni. 5 customers liked all three toppings, 7 customers liked pepperoni and mushrooms, 4 liked pepperoni and sausage, and 3 liked sausage and mushrooms. Find the following:</p> <p>A. Find <math>P(\text{pepperoni and mushrooms})</math>.        B. Find <math>P(\text{pepperoni or sausage})</math>.        C. Find <math>P(\text{sausage} \mid \text{pepperoni})</math>        D. Find <math>P(\text{mushrooms only})</math>.</p>	
<p>4. There are 150 students in the 9<sup>th</sup> grade. 80 are taking Math, 50 are taking English, and 10 are taking both subjects. All students are taking one or the other. Find the following:</p> <p>A. <math>P(\text{students in Math and English})</math>        B. <math>P(\text{Math} \mid \text{English})</math>.        C. <math>P(\text{English} \mid \text{Math})</math>        D. <math>P(\text{Math} \mid \text{not taking English})</math>        E. <math>P(\text{Math})</math></p>	

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<p>5. In a class there are: 10 students who play soccer and basketball, 7 students do not play soccer or basketball, 13 students play soccer, 19 students play basketball. Draw a Venn diagram to depict this scenario.</p> <p>A. Find <math>P(\text{basketball} \mid \text{soccer})</math>.        B. Find <math>P(\text{soccer})</math>.        C. Find <math>P(\text{basketball} \mid \text{soccer})</math>.</p>	
<p>6. A pencil pocket has 20 pens that are red or blue. 8 pens are blue and 6 pens are red and the remaining pens do not work at all. How many pens do not work?</p> <p>A. Find <math>P(\text{red})</math>.        B. Find <math>P(\text{not working})</math>.</p>	
<p>7. In a camp there are a total of 40 students. 32 students play only tennis and 5 students play only hockey. How many student play both hockey and tennis?</p> <p>A. Find <math>P(\text{hockey} \mid \text{tennis})</math>        B. Find <math>P(\text{tennis})</math></p>	
<p>8. 32 students took part in a survey. Students were asked if they had a cat or dog as a pet at home. 10 students said they had only ever had a dog. 8 students said they had only ever had a cat. 8 students said they had both. 6 students said they had never had a dog or a cat. Draw a Venn diagram to display this.</p> <p>A. Find <math>P(\text{dog} \mid \text{cat})</math>        B. Find <math>P(\text{cat})</math></p>	
<p>9. 26 people were surveyed about their choice of cell phones. The survey finds that 14 people have Apple iPhones, 10 have Samsungs, and 5 have Nokias. Four have Apple iPhones and Samsungs, 3 have Apple iPhones and Nokias, and one has a Samsung and a Nokia. If no one has all three kinds of phone, how many people have none of these cell phones?</p> <p>D. Find <math>P(\text{Apple} \mid \text{Samsung})</math>.        E. Find <math>P(\text{No Nokia} \mid \text{Apple})</math>.        F. Find <math>P(\text{Samsung} \mid \text{No Apple})</math>.</p>	