1. A. Make a VENN diagram of the following Chart showing what classes each student was enrolled in this semester.

<table>
<thead>
<tr>
<th>Name</th>
<th>Math</th>
<th>Language Arts</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashley</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Betsy</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Chris</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Devonte</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Eder</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>George</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heather</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Isabella</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jessica</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krista</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. \((LA)\):

C. \((Math \cap Science)\):

D. \((Math)'\):

E. \((Math \cup LA)\):

F. \((Math \cup LA)'\):

G. \((Math \cap LA)\):

H. \((Math \cap LA \cap Science)\):

I. \((Math \cup LA) \cap (Science)\):

J. \((Math \cap LA) \cup (Science)\)
2. Given \( A = \{1, 2, 3, 6, 7, 9\} \), \( B = \{2, 4, 6, 7, 8\} \), and \( \Omega = \{1, 2, 3, 4, 5, 6, 7, 8, 9\} \) answer the following.

A. \((A \cap B)\):

B. \((A \cup B)\):

C. \((A)'\):

D. \((A \cap B)'\):

3. A manager that owns 3 local area Car Maintenance Garages was researching certifications of mechanics that worked for her company. Consider the following Venn diagram.

a. How many mechanics worked for her company?

b. How many of the mechanics are certified by ASE to do work on Brakes?

c. How many of the mechanics are certified by ASE to do work on Brakes and Tune-Ups \((Brakes \cap Tune-Ups)\)?

d. How many of the mechanics are certified by ASE to do work on either A/C or Tune-Ups \((A/C \cup Tune-Ups)\)?

e. How many of the mechanics have their certification in Brakes or A/C but not in Tune-Ups? \((Brakes \cup A/C) \cap (Tune-Ups)'\)

4. The following Venn diagram shows a breakdown of a small high schools sports program.

a. How many students play only Tennis?

b. How many students play basketball and tennis?

c. How many students play basketball or softball/baseball? \(Basketball \cup Baseball/Softball\)

d. How many students play baseball/softball or tennis but not basketball? \((Baseball/Softball \cup Tennis) \cap (Basketball)'\)

e. How many students that play a sport do not play basketball?

f. How many students attend this school?

g. How many students do not play tennis in total?
5. In the state of Oregon, all of the area codes start with a number greater than 4 and end in an odd number (e.g. 503-232-1235, 971-923-5648). Let \( A \) represent the set of all area codes that start with an even number. Let \( B \) represent the set of all area codes that could be used in Oregon by the requirements stated earlier.

Which might be an area code that belongs to the set \( (A \cap B) \)?

A. 403  
B. 792  
C. 892  
D. 631

Which might be an area code that belongs to the set \( (A \cap B') \)?

A. 403  
B. 792  
C. 892  
D. 631

Which might be an area code that belongs to the set \( (A' \cap B') \)?

A. 403  
B. 792  
C. 892  
D. 631

6. In a particular state, the first character on a license plate is always a letter. The last character is always a digit from 0 to 9. Let \( V \) represents the set of all license plates beginning with a vowel, and \( O \) represents the set of all license plates that end with an odd number,

Which might be a license plate that belongs to the set \( (V \cap O) \)?

A.  
B.  
C.  
D.  

Which might be a license plate that belongs to the set \( (V \cap O') \)?

A.  
B.  
C.  
D.  

Which might be a license plate that belongs to the set \( (V' \cap O') \)?

A.  
B.  
C.  
D.  