Worth: 2%  

Due: By 10pm on Friday 23 September.

Remember to write your full name and student number prominently on your submission. Please read and understand the policy on Collaboration given on the Course Information Sheet. Then, to protect yourself, list on the front of your submission every source of information you used to complete this homework (other than your own lecture and tutorial notes, and materials available directly on the course webpage). For example, indicate clearly the name of every student with whom you had discussions, the title of every additional textbook you consulted, the source of every additional web document you used, etc. For each question, please write up detailed answers carefully. Make sure that you use notation and terminology correctly, and that you explain and justify what you are doing. Marks will be deducted for incorrect or ambiguous use of notation and terminology, and for making incorrect, unjustified, ambiguous, or vague claims in your solutions.

1. **Note:** This is not a question about the course material.

   The course CSC 165 H1F is part of the Faculty of Arts & Science’s Writing Instruction for TAs (WIT) Project — see http://www.artsci.utoronto.ca/main/newsitems/wit/ for some details. In order to assess the success of this project, anonymized copies of your homework (i.e., copies where your name and student number have been removed) may be used to help improve the effectiveness of teaching in the Department of Computer Science.

   To answer this question, please write out exactly one of the following sentences, to indicate whether or not you accept to participate in this project.

   * I hereby **give** permission for any of my written work from CSC165 H1F to be used anonymously in the WIT Project.

   * I hereby **withhold** permission for any of my written work from CSC165 H1F to be used anonymously in the WIT Project.

   Note that your participation in this project is completely voluntary and will in no way affect your standing in the course.

2. Consider the following (fictional) information regarding some of a restaurant’s menu choices.

<table>
<thead>
<tr>
<th>Item</th>
<th>Vegetarian?</th>
<th>Popular?</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spaghetti with Tomato Sauce</td>
<td>Yes</td>
<td>Yes</td>
<td>$7.99</td>
</tr>
<tr>
<td>Spaghetti with Meat Sauce</td>
<td>No</td>
<td>Yes</td>
<td>$8.99</td>
</tr>
<tr>
<td>Burger &amp; Fries</td>
<td>No</td>
<td>Yes</td>
<td>$8.99</td>
</tr>
<tr>
<td>Fish &amp; Chips</td>
<td>No</td>
<td>No</td>
<td>$12.99</td>
</tr>
<tr>
<td>Caesar Salad</td>
<td>Yes</td>
<td>No</td>
<td>$5.99</td>
</tr>
</tbody>
</table>

   For each statement below, say whether the statement is true or false and state which items you need to check in order to verify your answer — use the smallest number of items possible.

   (a) Every vegetarian item is popular.

   (b) Popular items cost less than $10.

   (c) Some popular items are not vegetarian.

   (d) Some item that costs less than $10 is neither vegetarian nor popular.

3. For each statement in the previous question, draw one Venn diagram representing a menu that makes the statement true, and another Venn diagram representing a menu that makes the statement false. You may have to come up with menus different from the one in the previous question.

   (HINT: It’s fine to include only certain subsets and not others in your diagrams — depending on which properties of the menu items are relevant to the statement.)