1. Are the following valid identifiers? Write True or False. You do not have to provide any reason. (18 pts)
   1) _void __ True________
   2) int __False________
   3) Int __True________
   4) double01 __True________
   5) 01double __False________
   6) double!! __False________

2. Compare the following two numbers. Show all your work. (12 pts)

   \[(1010)_2 \quad (10)_{10}\]

   \[(1010)_2 \rightarrow (10)_{10}\]
   \[(1010)_2 = 2^3 + 2^1 = (10)_{10}\]

   \[(10)_{10} \rightarrow (1010)_2\]
   \[10/2 = 5 \quad \ldots \quad 0\]
   \[5/2 = 2 \quad \ldots \quad 1\]
   \[2/2 = 1 \quad \ldots \quad 0\]
   \[1/2 = 0 \quad \ldots \quad 1\]

   Thus \[(10)_{10} = (1010)_2\]

3. Given the variables declared as
   \[
   \text{int } t = 2, \ u = 4; \\
   \text{double } x = 6.0, \ y = 3.0; 
   \]

   Evaluate the following numerical expressions. Fill in the values and types of the results. The first row shows an example. Assume that expressions are independent. (40 pts)

<table>
<thead>
<tr>
<th>Expression</th>
<th>Value</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>x + 1.0</td>
<td>7.0</td>
<td>double</td>
</tr>
<tr>
<td>t / 4.0 + 5</td>
<td>5.5</td>
<td>double</td>
</tr>
<tr>
<td>t / 4 + 5</td>
<td>5</td>
<td>int</td>
</tr>
<tr>
<td>t / 4 + 5.0</td>
<td>5.0</td>
<td>double</td>
</tr>
<tr>
<td>(float) x + u</td>
<td>10.0</td>
<td>float</td>
</tr>
<tr>
<td>(int) x / y</td>
<td>2.0</td>
<td>double</td>
</tr>
<tr>
<td>(int) x % u</td>
<td>2</td>
<td>int</td>
</tr>
<tr>
<td>t++ - --u</td>
<td>5</td>
<td>int</td>
</tr>
<tr>
<td>++x + - x--</td>
<td>0.0</td>
<td>double</td>
</tr>
</tbody>
</table>

4. Write the values that will be printed to the console by the program below: (30 pts)

   int x = 3, y = 4, z = -2;
   z += ++y;
   x *= z--; 
   y %= z;
   System.out.println(x); \[9\]
   System.out.println(y); \[1\]
   System.out.println(z); \[2\]
   x = 4;
   y = 7;
   z -= ++x * y--; 
   System.out.println(x); \[5\]
   System.out.println(y); \[6\]
   System.out.println(z); \[-33\]