Instructions: This quiz homework assignment focuses primarily on some of the basic input and output of C++. The answers to the following questions can be determined from Chapters 3 and 4 of the lecture notes and Chapters 2 through 4 of the text. When code fragments are given, assume the presence of any include directives that are needed to ensure compilation.

After you have analyzed the questions and decided what answers you believe are correct, you may find it useful to write some short programs to test your logic.

The on-line Opscan form for this quiz provided by the Curator system must be used for this assignment. (No other submissions will be accepted!) Check the course web site for the due date for this quiz.

The CS1044 online quizzes are open book, open notes, open Web quizzes. It is an honor code violation to discuss, (in any form: written, verbal or electronic), any portion of these quizzes with any other students, (regardless of whether they are taking the course or not). It is also an honor code violation to have a copy of a quiz, (in any form: written, verbal or electronic), in your possession when not taking a quiz. Failure to adhere to any of these restrictions is a Va Tech Honor Code violation, (www.honorsystem.vt.edu).

For questions 1 through 4, consider executing the code fragment:

```cpp
bool A, B, C, D;
// code that assigns values to A, B, C, and D
if (A && !B)
    if (C || !D)
        cout << "one" << endl;
    else if (D)
        cout << "two" << endl;
    else
        cout << "three" << endl;
else if (C == D)
    cout << "four" << endl;
else if (C)
    cout << "five" << endl;
else
    cout << "six" << endl;
```

1. What of the following sets of values for A, B, C, and D would cause the string "two" to be printed?

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>true</td>
<td>false</td>
<td>true</td>
</tr>
<tr>
<td>2)</td>
<td>true</td>
<td>true</td>
<td>true</td>
</tr>
<tr>
<td>3)</td>
<td>true</td>
<td>false</td>
<td>false</td>
</tr>
<tr>
<td>4)</td>
<td>true</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td>5)</td>
<td>false</td>
<td>false</td>
<td>true</td>
</tr>
<tr>
<td>6)</td>
<td>false</td>
<td>true</td>
<td>true</td>
</tr>
<tr>
<td>7)</td>
<td>false</td>
<td>false</td>
<td>false</td>
</tr>
<tr>
<td>8)</td>
<td>false</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td>9)</td>
<td>None of these</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. What of the following sets of values for A, B, C, and D would cause the string "four" to be printed?

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>false</td>
<td>true</td>
<td>true</td>
<td>true</td>
</tr>
<tr>
<td>2</td>
<td>false</td>
<td>true</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td>3</td>
<td>false</td>
<td>true</td>
<td>false</td>
<td>true</td>
</tr>
<tr>
<td>4</td>
<td>false</td>
<td>true</td>
<td>false</td>
<td>false</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5) 1 and 4 only

3. What of the following sets of values for A, B, C, and D would cause the string "five" to be printed?

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>false</td>
<td>true</td>
<td>true</td>
<td>true</td>
</tr>
<tr>
<td>2</td>
<td>false</td>
<td>true</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td>3</td>
<td>false</td>
<td>true</td>
<td>false</td>
<td>true</td>
</tr>
<tr>
<td>4</td>
<td>false</td>
<td>true</td>
<td>false</td>
<td>false</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5) 1 and 4 only

4. Consider executing the following code fragment (assume x is an int variable):

```java
if ( x <= 0 )
    cout << "One" << endl;
else if ( x <= 10 )
    cout << "Two" << endl;
else if ( x <= 20 )
    cout << "Three" << endl;
```

The string "Two" will be printed if and only if x satisfies the condition:

1) x <= 10
2) 0 < x and x < 10
3) 0 < x and x <= 10
4) 0 <= x and x < 10
5) 0 <= x
6) None of these

5. Assume the following variable declarations and initializations:

```java
int x = 0, y = 1, z = 7;
```

Determine if the following Boolean expression would evaluate as true or false in C++, or if there's something (syntactically) wrong with the expression:

```java
(x & y)
```

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>true</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>false</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>syntax error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>None of these</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Assume the following variable declarations and initializations:

```c
int x = 0, y = 1, z = 7;
```

Determine if the following Boolean expression would evaluate as true or false in C++, or if there's something (syntactically) wrong with the expression:

\[(x \lor y)\]

1) true 3) syntax error
2) false 4) None of these

7. Assume the following variable declarations and initializations:

```c
int x = 0, y = 1, z = 7;
```

Determine if the following Boolean expression would evaluate as true or false in C++, or if there's something (syntactically) wrong with the expression:

\[(x \&\& y \lor x \&\& z)\]

1) true 3) syntax error
2) false 4) None of these

8. Assume the following variable declarations and initializations:

```c
int x = 0, y = 1, z = 7;
```

Determine if the following Boolean expression would evaluate as true or false in C++, or if there's something (syntactically) wrong with the expression:

\[(x < y \lor y \geq z)\]

1) true 3) syntax error
2) false 4) None of these

9. Assume the following variable declarations and initializations:

```c
int x = 0, y = 1, z = 7;
```

Determine if the following Boolean expression would evaluate as true or false in C++, or if there's something (syntactically) wrong with the expression:

\[(x < y \lor y == z \&\& z < x)\]

1) true 3) syntax error
2) false 4) None of these
10. Assume the following variable declarations and initializations:

    int x = 0, y = 1, z = 7;

Determine if the following Boolean expression would evaluate as true or false in C++, or if there's something (syntactically) wrong with the expression:

    (7 * x <= z)

1) true
2) false
3) syntax error
4) None of these