Name (print): ______________________________

1. Choose the most correct answer for each of the following multiple choice questions.
   
   (a) (1 point) Because Java is a strongly-typed language, what is true as a result?
      
      A. Before a value is assigned to a variable, Java checks the types of the variable and the value being assigned to it to determine if they are compatible.
      B. Java does not automatically convert from one type to another.
      C. Java does not allow the programmer to manually convert from one type to another.
      D. You cannot have an expression with both integer and floating-point types
      E. Java will automatically perform all conversions amongst datatypes.

   (b) (1 point) What operators determine whether a specific relationship exists between two values?
      
      A. Arithmetic operators
      B. Logical operators
      C. Comparison or Relational operators
      D. Binary operators
      E. Assignment operators

   (c) (1 point) What is the term for enclosing one structure inside of another?
      
      A. Nesting
      B. Enclosure
      C. Zoning
      D. Initialization
      E. Inserting

2. (4 points) What is the output of the following code fragment?
   
   ```java
   int depth = 12, wtemp = 42, stemp = 90;
   System.out.print("The water is: ");
   if ( depth >= 8 ) {
       System.out.print("deep ");
       if ( wtemp <= 50 ) {
           System.out.print("cold ");
       }
   }
   System.out.print(" wet");
   System.out.println(" and the sand is: ");
   if (stemp >= 80) { System.out.println("warm."); }  
   if (stemp <= 80) { System.out.println("not warm."); }
   ```
Solution: The water is deep cold wet and the sand is warm
3. (5 points) Given the variable declarations and initializations, evaluate each expression below, and give the value of the result of the expression. If the expression cannot be evaluated or would result in an error, you may simply write “error.” Assume each expression is evaluated with the original values of the variables. (In other words, assume the expressions are independent and do not affect one another.)

```java
int a = 1, b = 2, c = 3, d = 1;
```

<table>
<thead>
<tr>
<th>Expression</th>
<th>Result Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a == b</td>
<td>false</td>
</tr>
<tr>
<td>b != d</td>
<td>true</td>
</tr>
<tr>
<td>c &lt;= b</td>
<td>false</td>
</tr>
<tr>
<td>a &lt; c</td>
<td>true</td>
</tr>
<tr>
<td>a == d</td>
<td>true</td>
</tr>
<tr>
<td>c &gt; a</td>
<td>true</td>
</tr>
<tr>
<td>a &gt;= c</td>
<td>false</td>
</tr>
<tr>
<td>a &lt; b &lt; c</td>
<td>error</td>
</tr>
<tr>
<td>a &lt; b &amp;&amp; b &gt; c</td>
<td>false</td>
</tr>
<tr>
<td>a == b</td>
<td></td>
</tr>
</tbody>
</table>

4. (3 points) We are writing to a program to give a user feedback about the cost of their monthly rent. If the amount is less than 600 dollars or more than 1200 dollars, we need to tell them they pay an unusual amount for rent. Write code below so that the code will function as described.

```java
Scanner in = new Scanner(System.in);
System.out.print("What is your monthly rent cost?\n");
int cost = in.nextInt();

//Your code here

Solution:
```java
if (min < 5 || min > 20) {
    S.O.P("Unusual commute you have there.");
}
```