1. True or False:
   
   (a) F In HTML, elements displayed by the browser are in the `<head>` section.
   
   (b) F To use CSS, you must link to an external style sheet.
   
   (c) F Links cannot be styled.
   
   (d) F Tags describe properties of an element.
   
   (e) T In HTML, you can have lists nested inside lists.
   
   (f) T Strict XHTML requires the use of `<br />` instead of `<br>`
   
   (g) F XHTML is the same as strict HTML 4.01.
   
   (h) T In JavaScript, loops can be nested inside loops.
   
   (i) F The regular expression `/\w(10)/` matches the form of US phone numbers.
   
   (j) F JavaScript functions cannot call other functions.

2. Answer in two sentences or less the following:

   (a) What is a function in JavaScript? Give an example.

   Functions are reusable pieces of code that perform common tasks. For example, the function alert() pops up a dialog box with a message to the user.

   (b) How do you define a function in JavaScript?

   To define a function, you write:
   
   ```javascript
   function NameOfTheFunction (anyInputs) {
     stuffToBeDone;
   }
   
   where NameOfTheFunction is the name you gave your function, anyInputs are the parameters or inputs to the function, and stuffToBeDone is a sequence of commands to be performed.
   ```

3. Fill in the following table with the corresponding decimal or hexcode representation of the number. For partial credit, show your work.

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Hexcode</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>C</td>
</tr>
<tr>
<td>18</td>
<td>#12</td>
</tr>
<tr>
<td>160</td>
<td>#a0</td>
</tr>
<tr>
<td>164</td>
<td>#a4</td>
</tr>
<tr>
<td>254</td>
<td>#fe</td>
</tr>
</tbody>
</table>

#12 = 16 · 1 + 2 = 18

160 divided by 16 is 10 remainder 0. 10 in hex is #a

#a4 = 16 · #a + 4 = 16 · 10 + 4 = 164

#fe = 16 · #f + #e = 16 · 15 + 14 = 240 + 14 = 254
4. (a) What does the following JavaScript code do? Write the ending value for each variable in the box below. (Show your work for partial credit.)

```javascript
var date, minutes, hours, month = "May";

minutes = 100;
hours = minutes / 60;
minutes = minutes % 60;
date = month + " 21";
minutes--;
hours = hours + 10;
```

<table>
<thead>
<tr>
<th>date</th>
<th>minutes</th>
<th>hours</th>
<th>month</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>?</td>
<td>?</td>
<td>“May”</td>
</tr>
<tr>
<td>“May 21”</td>
<td>100</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) What does the following JavaScript code do?

```javascript
function checkPassword() {
    var password = "hello";
    var input = prompt("Please enter password");
    while (input != password) {
        input = prompt("Please enter password");
    }
    alert("Congrats! You guessed the password!");
}
```

Repeatedly asks the user for a password until they enter ‘‘hello’’.

5. Fill in the following Javascript functions that will do the following:

(a) Displays a pop-up window with the message, “Hello”:

```javascript
function greetUser() {
    alert('Hello');
}
```

(b) Take as input a number, hour, and return true if hour is less than 11, otherwise return false:
function isMorning(hour)
{
    if ( hour < 11)
        return true;
    else
        return false;
}

(c) Takes as input a number, count, and displays ”Are you sure?” that many times:

    function checkWithUser(count)
    {
        var i;
        for ( i = 0 ; i < count ; i++ ) {
            alert("Are you sure?");
        }
    }

6. Be the browser with the following HTML files (note that the CSS and JavaScript is in-line).

    (a) Draw what the user will see on the screen when the browser loads. Indicate any style (color, borders, fonts, etc.).

        <html>
        <head>
        <style>
            body {
                font-family : Florence, cursive;
            }
            img {
                padding : 5px;
                margin : 0px 20px;
                border-style : dotted;
            }
            #emily {
                width = 200px;
                float : left;
            }
        </style>
        <script>
            function displayMessage(message) {
                alert(message);
            }
            function disappear(id) {
                document.getElementById(id).style.display = "none";
            }
        </script>
        </head>
        <body>
            <!-- Your content here -->
        </body>
    </html>
(b) What happens when the page is resized?
   A dialog box pops up with ‘‘I’m shrinking’’.
(c) What happens when you click on the image?
   The quote disappears from the browser window.

7. Write the style sheet, lounge.css, that will arrange the following page:
   the fonts should be large and cursive, the headings should be orange with the h1
   at 150% and h2 at 130%, and the paragraph guarantee should have serif fonts,
   a red solid border, background color yellow, and a background image repeated
   across the upper edge (path for the image is “images/background.gif”). Fur-
   ther, the elixir menu (contained in a div) should be displayed as a sidebar menu
   on the upper left hand side of the page.
   (Hint: Do not change any of the HTML code.)
8. Consider the following table:
(a) Write the HTML for the **first row only** of the table:
(Hint: the table has 5 data cells in each row)

```html
<TR class = "colorRow">
<TD COLSPAN=3></TD>
<TH>High /<BR> Low (&deg;F)</TH>
<TH>Precip. %</TH>
</TR>
```

(b) Write the HTML for the **second row only** of the table:
(Hint: the image is called "mostlySunny.gif")

```html
<TR>
<TD>Tue <BR> May 19</TD>
<TD><IMG SRC="mostlySunny.gif"></TD>
<TD>Mostly Sunny</TD>
<TH>70&deg;/54&deg</TH>
<TD>0 %</TD>
</TR>
```

(c) Write the CSS to style the table:
(Hint: remember to provide background color to the first row only, center align all text, and style the caption)

```css
table {
  width : 400px;
}
td, th {
  text-align: center;
}
.colorRow {
  background-color : silver;
}
```

9. Create a form for ordering pizza from 228 Pizza Shop. Your form should have the following choices (the name used by the web application is included in **typewriter font**):

- type of crust (thin, thick): crust,
• toppings (extra cheese, pepperoni, mushrooms): toppings[],
• name: name,
• a text area for comments and special instructions: comments

For the first, you should allow only one answer (ie radio buttons or pull-down menu), while for extras, multiple answers are expected (i.e. checkboxes).

The web application for processing the form is located at:
http://comet.lehman.cuny.edu/stjohn/pizza.php

<form action="http://comet.lehman.cuny.edu/stjohn/pizza.php" method="POST">
<p>Crust:
  Wheat:<input type="radio" name="crust" value="Thick" /> White:<input type="radio" name="crust" value="Thin" />
  Rye:<input type="radio" name="bread" value="Rye" />
</p>

<p>Toppings:
  Extra cheese: <input type="checkbox" name="toppings[]" value="cheese"/>
  Pepperoni: <input type="checkbox" name="toppings[]" value="pepperoni"/>
  Mushrooms: <input type="checkbox" name="toppings[]" value="mushrooms"/>
</p>

<p>Name: <input type="text" name="name" value="" /></p>

<p>Comments:<br />
<textarea name="comments" rows="3" cols="50">(none)</textarea></p>

<p> <input type="submit" value="Order Now!"/> </p>
</form>

10. Write a complete HTML file with JavaScript for a guessing game program that asks the user to guess your secret number:

• If they enter a number that’s too low, tell them so, and prompt them for another guess.
• Similarly, if they enter a number that’s too high, tell them so, and prompt them for another guess.
• When they guess the correct number, congratulate them and end the game.

<html>
<head>
<script>
  function guess() {
    var secret = 4;
    var numGuessed = prompt('Enter a number: ');

```html
while ( numGuessed != secret ) {
    if ( numGuessed < secret )
        numGuessed = prompt('Enter a higher number: ');
    else
        numGuessed = prompt('Enter a lower number: ');
}
alert("Congratulations!");
</script>
</head>

<body onload = "guess();">
</body>
</html>
```