Discuss the effects of The Long Tail phenomenon put forth by Chris Anderson of Wired magazine in 2004. Consider the economic, cultural, and political impact. (5pts)


2. Convert the following numbers from the base shown to base 10 (2pts):
   a) 101 (base 2)
   b) 567 (base 8)
   c) E8C (base 16)
   d) 567 (base 16)

Convert the following decimal numbers to binary (2pts):
   a) 38
   b) 88
   c) 999
   d) 1

Explain how base 2 and base 8 are related (1pt).

3. Given the following Huffman encoding table, decipher the bit strings below (2pts):

<table>
<thead>
<tr>
<th>Huffman Code</th>
<th>Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>A</td>
</tr>
<tr>
<td>11</td>
<td>E</td>
</tr>
<tr>
<td>010</td>
<td>T</td>
</tr>
<tr>
<td>0110</td>
<td>C</td>
</tr>
<tr>
<td>0111</td>
<td>L</td>
</tr>
<tr>
<td>1000</td>
<td>S</td>
</tr>
<tr>
<td>1011</td>
<td>R</td>
</tr>
<tr>
<td>10010</td>
<td>O</td>
</tr>
</tbody>
</table>

   a) 1000011010010101111
   b) 100001011000111

   What is an RGB value (1pt)?

   What color does an RGB value of (255, 0, 0) represent (1pt)?
What is the difference between vector graphics and raster graphics (1pt)?

4. Draw a circuit diagram corresponding to the following Boolean expression (2pts):
   \[(AB) + (BC)\]

Show the behavior of the following circuit with a truth table (3pts):

5. Name and describe the five units of the von Neumann Architecture (5pts)

6. Create an HTML document for a web page that has each of the following features (5pts):
   a) a major heading
   b) a sub heading
   c) an ordered list
   d) an unordered list
   e) a link to another web page

**NOTE:** This is due at our next Monday class October 23, 2006 – No late submissions!