Quiz 2

Mon Oct 1

You have up to 20 minutes. You may use a standard calculator if necessary, but no text book or notes.

1. Below is a tree representing a variable-width encoding of 9 letters. Use it to:
   - decode the bits 10111101110011101 into a word: __________________
   - encode the word FELT as bits: __________________

![Tree Diagram]

2. Draw a tree representing a variable-width encoding of the four letters A, L, N, and T. Use it to encode the word ATLANTA. The fixed-width tree (below) uses exactly 2 bits per character, so encoding ATLANTA requires 14 bits. How many bits does your tree need to encode ATLANTA?

![Tree Diagram]
3. If an image uses 9 bits for each pixel, what is the maximum number of distinct colors it can contain?

4. Encode the following 8 × 8 icon into hexadecimal, using 1 bit per pixel.