Quiz 1

13 December 2011

1. Add and verify the following **unsigned** binary numbers.

```
  1 0 1 1 0 1                    1 1 0 1 1 1
+ 0 1 1 1 0 0                  + 1 0 1 1 0 0
--------------                 --------------
```

2. Draw an 8×8 grid and use it to decode the following image, specified in hexadecimal using 1 bit per pixel.

```
18
3C
7E
DB
FF
24
5A
A5
```

3. Suppose we have an image that uses 30 colors. How many bits per pixel are required to specify the color?

4. Draw a binary tree that corresponds to the following encoding of six characters. The characters should appear in boxes at the leaves. Branch left on a zero, or right on a one.

```
U  00
V  010
W  011
X  10
Y  110
Z  111
```