

Problem 1.

Normal position



Inverted only



Flipped only



Shifted only



Twisted only





Inverted, Shifted, and Twisted

We've seen six combinations of Inverted, Flipped, Shifted, and Twisted (Normal position is the “combination” of none of them).
How many total combinations are possible?

Problem 2.

Read the 12 decimal numbers of this UPC.



Problem 3.

How does a UPC reader know it's not reading the pattern upside-down (and therefore backwards)?

Problem 4.

The html code for colors uses six “hex” symbols. For example:

```
<body link="#0000ff" bgcolor="#fff4e0" vlink="#800080">
```

Here “link” is the color used for text with a link, “vlink” is the color the text turns once you have visited the link, and “bgcolor” is the background color. The first two hex symbols tell the amount of red (R), the second two are the green (G), and the third two are the blue (B). What are the ratios of R, G, and B for the background color `fff4e0` ?

Problem 5.

Open a document. Hold down the ALT key and type 0169 on the right keypad. Release the ALT key, and a symbol will appear. Experiment with other numbers less than 0256. Can you find the ° symbol for degrees?

Problem 6.

How many Website addresses are possible using only lower-case alphabetical characters (32 or fewer). Will we run out? How many addresses could each person on Earth get?