Homework 3- Due 2/21/03

1. Given that the encoding of P is 1, Q is 2, and AND is 3, what is the Godel number of P AND Q?

2. Name three methods of programming a DNA computer.

3. What is stated of position/momentum pairs by the Heisenberg Uncertainty Principle?

4. Find the minimum Hamming distance between the following 3 words: 01110, 11000, 01011

5. One mask that actually calculates the x-derivative is

   -1  0  1
   -2  0  2
   -1  0  1

   Convolving this on a grid of 5x3

   0  1  3  2  3
   0  1  2  0  1
   0  1  2  2  3

   will produce what final output?

   A:
   0  1  3  2  3
   0  9  0  -1  1
   0  1  2  2  3