Homework 4

1 (20 points) Describe the NAND gate and show that it is
  functionaly complete

2 (20 points) Describe CNOT gate and show that it is reversible

3. (20 points) Describe Toffoli gate show that :
   (a) it is reversibe,
   (b) it is its own inverse,
   (c) it is a universal gate

4. (20 points) Describe Fredkin gate show that :
   (a) it is reversibe,
   (b) it is its own inverse,
   (c) it is a universal gate

5. (20 points) For Fredkin gate show *that* :
   $F(x, y, z) = (x, (\neg x \wedge y) \vee (x \wedge z), (\neg x \wedge z) \vee (x \wedge y))$