**Combinational Logic Design**

**Exercise 1:** A circuit that takes a 3 bit number and generates a 6 bit binary number equal to square of given number.

**Exercise 2:** Circuit of problem 1 for decimal digit input.

**Exercise 3:** A circuit that takes two 2-bit numbers and outputs their product.

**Exercise 4:** A circuit that takes a 4-bit number and outputs its 2's complement.

**Exercise 5:** A circuit that takes a 4-bit number outputs its 2's complement AND tells if number is multiple of 3 or not.

**Exercise 6**: Magicbox which takes a decimal digit if number is even it starts ringing a bell, if number is a multiple of 4 it starts vibrating, if number is odd it turns a red light on, if number is not a decimal digit it might vibrate/ring/turn the red light on but it starts ringing a danger alarm.

**Book Exercises (Moris Mano 4th Edition):**

3-11 and 3-27