Answer each of the following questions (you can use a calculator)

a. (5 pts) Write a sequence of functions calls using i2c_start(), i2c_get(char ackbit), i2c_put(char byte), i2c_stop(), i2c_rstart() that will implement a random READ from location 0xA050 in the within the 24LC515 serial EEPROM. Assume pin A1 is tied low, and pin A0 is tied high. Return the value read in the CHAR variable ‘c’.

```c
i2c_start(); // blksel A1 A0 Write command
i2c_put(0xAA); // i2c address byte: 1 0 1 0 1 0 1 0
i2c_put(0xA0); // high address byte
i2c_put(0x50); // high low address
i2c_rstart(); // restart transaction, can also do i2c_stop(), i2c_start();
i2c_put(0xAB); // i2c address byte: 1 0 1 0 1 0 1 1 (last bit is 1 because read)
data = i2c_get(1); // read one data byte, send ACK = 1
i2c_Stop(); // halt transaction
```

b. (2 pts) Draw a simple schematic that shows two I2C devices connected to the I2C interface of the PIC18.

c. (3 pts) How many I2C bit times is involved in doing a RANDOM WRITE of ONE BYTE to the 24LC515? Assume that start/stop counts as two bit times, and that you do not have to poll for end-of-write (assume the last write is finished).

```
bit times = start (1) + I2C addr byte (9) + mem hi addr (9) + mem lo addr (9) + data byte (9) + stop (1)
          = 38 bit times
```