I have provided a couple of solutions for each problem so you can see the different ways of writing this code.

ECE 3724/CS 3124 Quiz #5 Reese Solution

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

a. Write C code that will configure RB7, RB0 as outputs, and all other bits of port B as inputs.

```
//Sol A:  a '0' in TRISB makes the PORTB bit an output
TRISB = 0x7E; //01111110
```

```
//Sol B:  a '0' in TRISB makes the PORTB bit an output
TRISB = 0xFF;
bitclr(TRISB,7);
bitclr(TRISB,0);
```

b. Write C code that will test the FERR bit and turn on the LED below if it is set (identify the REGISTER and BIT number of FERR).

```
if (FERR) RB0 = 1;
 else RB0 = 0;
```

```
if (bittst(RCSTA,2)) bitset(PORTB,0);
 else bitclr(PORTB,0);
```

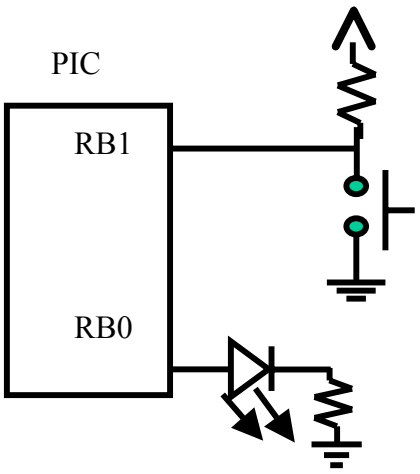
c. What is the bit time in microseconds for a baud rate of 57600?

1/57600 = 1.736 e-5 s * 1e6 us/1 s = 17.36 us

d. In the diagram below, if the pullup resistor is left off the switch, what can happen? Is there anyway to use the RB1 as a switch input without an external pullup resistor?

If the pullup resistor is left off, the switch input floats when the switch is not depressed, and can be read as either 1 or 0. The internal weak pullup on the RB1 port can be enable by the RBPU bit to replace the external pullup.

e. Write C code that waits for a character to be available from the serial port, and returns that character. If an overrun error has occurred, return a value of 0xFF.




```
char mygetch()
{
// wait for char
while (!RCIF) ;
if (OERR) return(0xFF);
return(RCREG);
}
```

```
char mygetch()
{
// wait for char
while (!bittst(PIR1, 5)) ;
if (bittst(RCSTA,1) return(0xFF);
return(RCREG);
}
```