## ECE 340 Homework

1. How are the digital I/O pins of the PIC32 arranged or organized?
2. What is a Special Function Register (SFR) and how are they used in the PIC32?
3. What is the purpose of the TRISA special function register (SFR) in the PIC32?
4. Many integers are 32-bits wide and can be represented by eight hexadecimal digits (think ECE 240!!!). Which bit positions are set to a '1' in the following 32-bit word: 0xC0301005? *Note: Bit positions are numbered starting with zero.*
5. Programmers often use C bitwise logical operators such as &, |, and ^, to manipulate which bit positions are set to '1' (or to '0'). This is often referred to as "masking", where a constant is used to force certain values or protect certain fields (i.e., groups of bits) within a word. Write the result for each of the following equations, assuming x is set to 0xC0301005:  
   1. x & 0x01010101;
   2. x | 0x11001100;
   3. x ^ ~x.