COMP 3350 Homework #1

Please show work (where needed) for each problem

1. How many bits are in:
   1. A byte (8 bits)
   2. A word (16 bits)
   3. A doubleword (32 bits)

1. Convert the following unsigned base2 numbers (binary) to base 16 numbers (hexadecimal): a. 0110 0001 1111 (61F)
   1. 1000 1111 1100 (8FC)
   2. 0001 0110 0100 0101 (1645)

1. Convert the following signed base 2 numbers to base 10 numbers:
   1. 1100 1010 (-54)
   2. 1111 0010 (-14)
   3. 1000 0111 (-121)

1. What is the range of (e.g. range of an unsigned nibble is 0 to 15):
   1. An unsigned 7-bit number? (0 to 127)
   2. A signed 7-bit number? (-64 to +63)

1. Provide the answer to following problems (∧ = AND ∨ = OR)
   1. 1000 ∧ 1110 (1000)
   2. 1000 ∨ 1110 (1110)
   3. (1000 ∧ 1110) ∨ (1001 ∧ 1110) (1000)
2. List all general purpose registers in 32-bit mode

EAX, EBX, ECX, EDX, ESI, EDI, EBP, ESP

1. Find the hexadecimal ASCII values for the following charters:
   1. g (67)
   2. ^ (5E)
   3. $ (24)

1. In a typical personal computer list from largest size (i.e. most total memory) to smallest:
   1. DRAM (main memory) (2nd biggest)
   2. SRAM (cache memory) (3rd biggest)
   3. Hard drive (biggest)
   4. Registers (smallest)