1. Information representation. We gotta have some question about number representation. Consider number system(s) that contain 12 bits, with the radix point just to the right of the MSB. For that arrangement of bits, fill in the missing elements of the following table. (Remember that Maximum is right-most on the number line; minimum is left-most on the number line.)

Partial Credit?

twos compliment is just inverting all the bits and then adding a 1 to the LSB not so

I thought we would be doing some IEEE floating point

hidden sign bit

Value	Unsigned binary pattern	Twos-complement pattern
Maximum	1111 1111 1111	0111 1111 1111
Minimum	0000 0000 0000	1000 0000 0000
27/64 = .421875	0.01101100 ✓	0011 0110 0000
-5/16	N/A	1101 1000 0000
1¾ = 1.750	1.1100 ✓	N/A
~~1407~~	N/A	101010000000

2. General information question:
   a) How does a programmer preserve the values of registers for "normal" processing when an interrupt is encountered?

Copy the registers to be changed to a known area, then restore them when leaving the interrupt service routine use: stmw and lmw.

   b) Give a sequence of instructions (only 2 needed) that will set up the system to expect the interrupt table to be found at the second legal location for the table. That is, what is the second legal location for the interrupt table, and how do you set it up?

-2 0x00010000 well the second legal loc. is 0x01000 not so

You set the offset of the vector EVPR and it goes to an ISR that will interupt the fetch, decode, execute cycle.

   c) We have programmed the system recognizing that the Interrupt Controller directs the hardware to utilize the instructions found at 0x500. If we had enough interrupts to keep it busy, how many different interrupt sources could be handled by the Interrupt Controller?

well we have 32 bits so I believe 32 is the answer but since we are already at the 16th bit the EE bit, I would say 32-16=16 -1

   d) What are the different types of instructions? Identify the types and give an example of each.

- work - add, subtract, mult, divide, AND, OR, EXOR
- movement - jump to subroutine, conditional jump
- control -
- ~~status~~.

   e) What is the purpose of the watchdog timer interrupt?

The watchdog timer can have a value set in it so that the timer doesn't get stuck in an infinite loop.