Tutorial 4 - Answers

Address	*Symbol Name*	*Hex*	*Decimal*	*Binary*
N/A	*WREG*	0x19	25	00011001
20	*i*	0xaf	175	10101111
21	*j*	0x3b	59	00111011
22	*k*	0xd4	212	11010100
23	*result*	0x00	0	0
03	*STATUS*	0x1b	27	00011011

1. ***Why is the address for i, 020 (remember this is 0x20 – i.e. hex20)?***
   The address is 020 because the first available GPR is located at 0x20.

2. ***What type of register is the STATUS register?***
   It is a hardware register that explicitly shows the commands the processer is executing. It contains the flags that will indicate the changes the current command is making.

3. ***Reset your program and step through it again, paying close attention to the first 3 bits of the "STATUS Register" in your "Watch" Window. When does a change occur?***
   As the 4th low order bit is used, the status register changes its value, 00011011 to 00011001.
   When the answer is 0, the zero bit gives 1. The zero bit is unaffected while no logic or arithmetic functions are executed.

4. ***Explain why the Z bit has been affected?***
   The Z bit is affected when the result of the logic becomes 0. The Z bit is set when the result is 0, otherwise it is 0.