Quiz 1  
CSE 30  
Summer 2001

#1. Show the representation of \(-420\) in the following representation schemes (assume 12-bit words):

a) sign magnitude

b) one’s-complement

c) two’s complement

#2. Convert \(313\) into (assume 12-bit words):

a) binary

b) octal

c) hexadecimal

#3. Fill in the CCR bits for the following addition instructions (8-bit two’s-complement numbers):

\[
\begin{array}{c}
10110001
+ 01010111
\hline
\end{array}
\quad
\begin{array}{c}
00110111
+ 01001010
\hline
\end{array}
\]

\[
\begin{array}{c|c|c|c|c|c}
N & Z & V & C & N & Z & V & C \\
\hline
\hline
|  |  |  |  | | | | \\
\hline
\end{array}
\quad
\begin{array}{c|c|c|c|c|c}
N & Z & V & C \\
\hline
\hline
|  |  |  |  | | | \\
\hline
\end{array}
\]

(over)
#4. Powers of 2

\[ 16\text{M} = 2^{\underline{\phantom{0}}} \]

\[ 2^{35} = \underline{\phantom{0}} \] (in terms of K, M, G, etc.)

#5. Inside the CPU:

The ________________________________ decodes the bits from the Instruction Register to determine what instruction to execute.

The ________________________________ receives data to operate on from the Register bank, performs the operation on these operands, and stores the result back in the Register bank.