

Name:

$$\begin{array}{r}
 01110101 \\
 +11011110 \\
 \hline
 01010011 \quad \checkmark
 \end{array}$$

1 (7) 1 = 0, no overflow

$$\begin{aligned} 64 + 32 + 16 + 8 + 4 + 2 + 1 &= 96 + 21 = 117 \\ -128 + 64 + 16 + 8 + 4 + 2 &= -128 + 80 + 14 \\ &= -128 + 94 \\ &= -34 \end{aligned}$$

$$\begin{array}{r} 117 \\ - 34 \\ \hline 83 \end{array}$$

$$\begin{array}{r}
 00110110 \\
 -00101011 \\
 \hline
 00110110 \\
 +11010101 \\
 \hline
 00001011
 \end{array}$$

$\rightarrow 1 \oplus 1 = 0$ , no overflow  
 $32 + 16 + 4 +$

$$32 + 16 + 4 + 2 = 48 + 6 = 54$$
$$-128 + 64 + 16 + 4 + 1 = -128 + 85 = -43$$

$$\begin{array}{r} 54 \\ - 43 \\ \hline 11 \\ \hline = \end{array}$$

$$\begin{array}{r} \begin{pmatrix} 0 & 1 & 1 & 1 & 0 & 1 & 0 & 1 \\ -1 & 1 & 0 & 1 & 0 & 1 & 1 & 0 \end{pmatrix} \\ \hline 01110101 \\ + 00101010 \\ \hline 10011111 \end{array}$$

→  $0 \oplus 1 = 1$ , overflow

$$32 + 8 + 2 = 42$$

← negative #.

$$\begin{array}{r} \begin{pmatrix} 1 & 1 & 0 & 1 & 0 & 0 & 1 & 1 \\ -1 & 1 & 1 & 0 & 1 & 1 & 0 & 0 \end{pmatrix} \\ \hline \end{array}$$

$\partial(\partial)0 = 0$ , no exception

$$\begin{array}{r} 117 \\ + 42 \\ \hline 159 \end{array}$$

outside of  
 $-128 \leq x \leq 127$   
 range.

$$\begin{array}{r} -45 \\ + 20 \\ \hline -25 \end{array}$$