

4.1)

addi \$8, \$0, 0

opcode	rs	rt	immediate
001000	00000	01000	0000000000000000
6	5	5	16

Instruktionswort: 001000 00000 01000 0000000000000000

Name	Value
\$8	0x00000000

00000000000000000000000000000000 ← Wert in \$0
 + 00000000000000000000000000000000 ← immediate
 00000000000000000000000000000000 → 0x00000000
 0 0 0 0 0 0 0 0

addi \$8, \$8, -1

opcode	rs	rt	immediate
001000	01000	01000	0000000000000001
6	5	5	16

Instruktionswort: 001000 01000 01000 0000000000000001

Name	Value
\$8	0x00000001

00000000000000000000000000000000 ← Wert in \$8
 + 00000000000000000000000000000001 ← immediate
 00000000000000000000000000000001 → 0x00000001
 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1

ori \$8, \$0, 0xffff

opcode	rs	rt	immediate
001101	00000	01000	1111111111111111
6	5	5	16

Instruktionswort: 001101 00000 01000 1111111111111111

Name	Value
\$8	0x0000ffff

00000000000000000000000000000001 ← Wert in \$8
 OR 00000000000000001111111111111111 ← immediate
 00000000000000001111111111111111 → 0x0000ffff
 0 0 0 0 f f f f = 65535

addi \$9, \$0, -16384 ($2^{14} = 16384$)

opcode	rs	rt	immediate
001000	00000	01001	1100000000000000
6	5	5	16

Instruktionswort: 001000 00000 01001 1100000000000000

Name	Value
\$8	0x0000ffff
\$9	0xffffc000

$$\begin{array}{r}
 00000000000000000000000000000000 \leftarrow \text{Wert in } \$0 \\
 + \quad 11111111111111111100000000000000 \leftarrow \text{immediate} \\
 \hline
 11111111111111111100000000000000 \rightarrow 0xffffc000 \\
 \begin{array}{ccccccccc}
 f & f & f & f & c & 0 & 0 & 0 &
 \end{array}
 \end{array}$$

add \$8, \$8, \$9

opcode	rs	rt	rd		
000000	01000	01001	01000	00000	100000
6	5	5	5	5	6

Instruktionswort: 000000 01000 01001 01000 00000 100000

Name	Value
\$8	0x0000bfff
\$9	0xffffc000

$$\begin{array}{r}
 00000000000000000111111111111111 \leftarrow \text{Wert in } \$8 \\
 + \quad 11111111111111111100000000000000 \leftarrow \text{Wert in } \$9 \\
 \hline
 10000000000000000101111111111111 \rightarrow 0x0000bfff \\
 \begin{array}{ccccccccc}
 0 & 0 & 0 & 0 & b & f & f & f &
 \end{array} \\
 = \\
 49151
 \end{array}$$