3.1

a.

signed short

b.

word

c.

1000 0010 0100 0001

d.

$$2^0+2^6+2^9-2^{15}=1+64+512-32768=-32191$$

e.

```
movw $33345, r14w

movw $0x8241, r14w
```

3.2

Operation	Wert (binär)	Wert (dezimal) signed	Wert (dezimal) unsigned
x	10001000	-120	136
x << 4	10000000	-128	128
x >> 4 (arithmetisch)	11111000	-8	121
x >> 4 (logisch)	00001000	8	8

3.3

Operand	Wert
%rax	0x1000 // Register
0x1004	0x1004 // Memory (absolute)
$0x1004	0x1004 // Immediate
(%rax)	0x10 // Memory (indirect) Adresse 0x1000
4(%rax)	0x11 // Memory (indexed) Adresse 0x1004
3(%rax, %rdx)	0x12 // Memory (indexed) Adresse 0x1008
0x201(%rcx,%rdx)	Wert an Adresse 0x208 // Memory (indexed)
0x20(,%rcx,4)	Wert an Adresse 0x28 // Memory (indexed)
(%rax,%rdx,8)	Wert an Adresse 0x1028 // Memory (indexed)