

Mathe 06

Nick Daiber

November 28, 2024

3

a

\Rightarrow
Sei $\text{ggT}(r, m) = 1 \stackrel{\text{Euklidischer Algorithmus}}{\Rightarrow} \exists a, b \in R : \overline{ar} + \overline{bm} = 1 \Rightarrow \overline{r}^{-1} = \overline{a}$

\Leftarrow
Sei $\overline{a}^{-1} = \overline{r} \Rightarrow \overline{ar} = 1$
 $ar + 0m = 1 \Rightarrow \text{ggT}(r, m) = 1$

b

\cdot	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	0	2	4	6	8
3	0	3	6	9	2	5	8	1	4	7
4	0	4	8	2	6	0	4	8	2	6
5	0	5	0	5	0	5	0	5	0	5
6	0	6	2	8	4	0	6	2	8	4
7	0	7	4	1	8	5	2	9	6	3
8	0	8	6	4	2	0	8	6	4	2
9	0	9	8	7	6	5	4	3	2	1
\overline{a}	\overline{a}^{-1}									
1	1									
3	7									
7	3									
9	9									