$30 \cdot x \equiv_{18} 6$

Schritt 1:

$ggT(30,18) = 6 \quad | \; 6 \quad \checkmark$

Schritt 2:

$$s \cdot 5 + t \cdot 3 = 1$$

$s_0 = 2$

$t_0 = -3$

$x_0 = 2 \cdot \frac{6}{6} \mod \frac{18}{6}$

$= 2 \mod 3$

$= 2$

$\mathbb{L} = \{ 2 + (i-1) \cdot 3 \mid 0 < i \leq 6 \}$

$= \{ 2, 5, 8, 11, 14, 17 \}$

$X \equiv_3 2$

$X \equiv_5 1$

$X \equiv_7 6$

Schritt 1:

$M = 105$

$M_1 = 35$

$M_2 = 21$

$M_3 = 15$

Schritt 2:

$35 \cdot x \equiv_3 1$

$35s + 3t = 1$

$s = -1 \; ; \; t = 12$

$x_{01} = -1 \cdot 1 \mod 3$

$= 2$

$21 \cdot x \equiv_5 1$

$21s \cdot 5t = 1$

$s = 1 \quad t = -4$

$x_{02} = 1 \cdot 1 \mod 5$

$= 1$

$15x \equiv_7 1$

$15s \cdot 7t = 1$

$s = 1 \quad t = -2$

$x_{03} = 1 \cdot 1 \mod 7$

$= 1$

Schritt 3:

$$x_0 = (2 \cdot 35 \cdot 2 + 1 \cdot 21 \cdot 1 + 6 \cdot 15 \cdot 1) \bmod 105$$
$$= 251 \bmod 105 = 41$$