

$$2x + 6y = 20 \quad | :2$$

$$1x + 3y = 10$$

$$\text{Schritt 1: } \begin{array}{cc} 5 \cdot 1 & + & 1 \cdot 3 & = & 1 \\ \uparrow & & \uparrow & & \\ -2 & & 1 & & \end{array}$$

$$\text{Schritt 2: } (x_0, y_0) = (-2 \cdot 10, 1 \cdot 10) = (-20, 10)$$

$$\text{Schritt 3: } L_G = \{ (-20 + 3 \cdot t, 10 - t) \in \mathbb{Z}^2 \mid t \in \mathbb{Z} \}$$

$$11x + 7y = 657$$

$$\text{ggT}(11, 7) = 1 \mid 657 \Rightarrow \text{Lösbar}$$

$$\text{Schritt 1: } \begin{array}{cc} 5 \cdot 11 & + & 1 \cdot 7 & = & 1 \\ \downarrow & & \downarrow & & \\ 2 & & -3 & & \end{array}$$

$$\text{Schritt 2: } (2 \cdot 657, -3 \cdot 657)$$

$$\hookrightarrow (1314, -1971)$$

$$\text{Schritt 3: } x = 1314 + 7 \cdot t \geq 0$$

$$y = -1971 - 11 \cdot t \geq 0$$

$$t \geq -\frac{1314}{7} = -187,7 \approx -187$$

$$t \leq -\frac{1971}{11} = -179,18 \approx -180$$

$$\left. \begin{array}{l} x = 1314 + 7 \cdot (-180) = 54 \\ y = \dots = 9 \end{array} \right\} 63 \text{ Pers.}$$