

Addition von Restklassen

Aufgabe 1

Summen derselben Elemente: Berechne alle Elemente der angegebenen Mengen. Beachte, dass ein Element nur ein Mal (und nicht mehrmals) in der Menge enthalten sein kann.

$$\begin{aligned} \text{a) In } \mathbb{Z}/4\mathbb{Z}: \quad M_1 &= \{[2], [2] + [2], [2] + [2] + [2], \dots\}, \\ M_2 &= \{[3], [3] + [3], \dots\}. \end{aligned}$$

$$\begin{aligned} \text{b) In } \mathbb{Z}/6\mathbb{Z}: \quad M_3 &= \{[2], [2] + [2], [2] + [2] + [2], \dots\}, \\ M_4 &= \{[3], [3] + [3], \dots\}, \\ M_5 &= \{[5], [5] + [5], \dots\}. \end{aligned}$$

$$\begin{aligned} \text{c) In } \mathbb{Z}/8\mathbb{Z}: \quad M_6 &= \{[2], [2] + [2], [2] + [2] + [2], \dots\}, \\ M_7 &= \{[4], [4] + [4], \dots\}, \\ M_8 &= \{[6], [6] + [6], \dots\}. \end{aligned}$$

$$\begin{aligned} \text{d) In } \mathbb{Z}/9\mathbb{Z}: \quad M_9 &= \{[2], [2] + [2], [2] + [2] + [2], \dots\}, \\ M_{10} &= \{[3], [3] + [3], \dots\}, \\ M_{11} &= \{[6], [6] + [6], \dots\}. \end{aligned}$$

$$\begin{aligned} \text{e) In } \mathbb{Z}/12\mathbb{Z}: \quad M_{12} &= \{[2], [2] + [2], [2] + [2] + [2], \dots\}, \\ M_{13} &= \{[3], [3] + [3], \dots\}, \\ M_{14} &= \{[5], [5] + [5], \dots\}. \end{aligned}$$