

Bestimme die Lösungsmenge der Gleichungen durch Äquivalenzumformungen.  $G = \mathbb{N}_0$ .

$$1. \quad 7z - 8 = 3z + 8 \quad || - 3z$$

$$4z - 8 = 8 \quad || + 8$$

$$4z = 16 \quad || : 4$$

$$z = 4$$

$$L = \{4\}$$

$$2. \quad 6x + 40 = 11x \quad || - 6x$$

$$40 = 5x \quad || : 5$$

$$8 = x$$

$$L = \{8\}$$

$$3. \quad 7x - 38 = 5x - 12 \quad || + 38$$

$$7x = 5x + 26 \quad || - 5x$$

$$2x = 26 \quad || : 2$$

$$x = 13$$

$$L = \{13\}$$

$$4. \quad 18 - 2x = 63 - 5x \quad || + 5x$$

$$18 + 3x = 63 \quad || - 18$$

$$3x = 45 \quad || : 3$$

$$x = 15$$

$$L = \{15\}$$

$$5. \quad 28 + 2y = 217 - 5y \quad || + 5y$$

$$28 + 7y = 217 \quad || - 28$$

$$7y = 189 \quad || : 7$$

$$y = 27$$

$$L = \{27\}$$

$$6. \quad 25 + 8x = 55 + 3x \quad || - 3x$$

$$25 + 5x = 55 \quad || - 25$$

$$5x = 30 \quad || : 5$$

$$x = 6$$

$$L = \{6\}$$

$$7. \quad 10x = 5x + 10 \quad || - 5x$$

$$5x = 10 \quad || : 5$$

$$x = 2$$

$$L = \{2\}$$

$$\begin{aligned}
8. \quad 60 - 2x &= 8 + 2x & || + 2x \\
60 &= 8 + 4x & || - 8 \\
52 &= 4x & || : 4 \\
13 &= x \\
L &= \{13\}
\end{aligned}$$

$$\begin{aligned}
9. \quad 7y + 27 &= 4y + 90 & || - 4y \\
3y + 27 &= 90 & || - 27 \\
3y &= 63 & || : 3 \\
y &= 21 \\
L &= \{21\}
\end{aligned}$$

$$\begin{aligned}
10. \quad 3x + 38 &= 5x + 10 & || - 3x \\
38 &= 2x + 10 & || - 10 \\
28 &= 2x & || : 2 \\
14 &= x \\
L &= \{14\}
\end{aligned}$$