

## Lösungen LGS 2

- 1.) I  $4x - 2y + 3z = 8$   
II  $x - 5y - z = 12$   
III  $x + 2z = 3$   
I  $\cdot 5 + \text{II} \cdot (-2) \Rightarrow \text{IV } 18x + 17z = 16$   
III  $\cdot (-18) + \text{IV} \Rightarrow L = \{(-1; -3; 2)\}$
- 2.) I  $x - 2y = -3$   
II  $3x - 2z = 7$   
III  $2y + z = -3$   
I + III  $\Rightarrow \text{IV } x + z = -6$   
II + IV  $\cdot 2 \Rightarrow L = \{(-1; 1; -5)\}$
- 3.) I  $3x - 5y - z = 7$   
II  $2x - 3y + 2z = -6$   
III  $7x + 8y + z = 3$   
I + III  $\Rightarrow \text{IV } 10x + 3y = 10$  und I  $\cdot 2 + \text{II} \Rightarrow \text{V } 8x - 13y = 8$   
IV  $\cdot 4 + \text{V} \cdot (-5) \Rightarrow L = \{(1; 0; -4)\}$
- 4.) I  $3a + 5b - c = 2$   
II  $2a - 3b + 2c = -2$   
III  $7a + 8b + c = -8$   
I + III  $\Rightarrow \text{IV } 10a + 13b = -6$  und I  $\cdot 2 + \text{II} \Rightarrow \text{V } 8a + 7b = 2$   
IV  $\cdot 4 + \text{V} \cdot (-5) \Rightarrow L = \{(2; -2; -6)\}$
- 5.) I  $a - 2b = -2$   
II  $3a - 2c = 12$   
III  $2b + c = 6$   
I + III  $\Rightarrow \text{IV } a + c = 4$   
II + IV  $\cdot 2 \Rightarrow L = \{(4; 3; 0)\}$
- 6.) I  $2a - 3b + 4c = 9$   
II  $-4a + 2b + 6c = -2$   
III  $7a - 8b = 11$   
I  $\cdot 3 + \text{II} \cdot (-2) \Rightarrow \text{IV } 14a - 13b = 31$   
III  $\cdot (-2) + \text{IV} \Rightarrow L = \{(5; 3; 2)\}$
- 7.) I  $a + b + c + d = 0$   
II  $2a - 3b - 2c + d = -1$   
III  $-a + 4b + c - d = 7$   
IV  $3a - 2b - 3c - 3d = -3$   
I + III  $\Rightarrow \text{V } 5b + 2c = 7$  und  
II + III  $\Rightarrow \text{VI } a + b - c = 6$  und I  $\cdot 3 + \text{IV} \Rightarrow \text{VII } 6a + b = -3$   
V  $5b + 2c = 7$   
VI  $a + b - c = 6$   
VII  $6a + b = -3$   
V + VI  $\cdot 2 \Rightarrow \text{VIII } 2a + 7b = 19$   
VII + VIII  $\cdot (-3) \Rightarrow L = \{(-1; 3; -4; 2)\}$

