

0.1 Der Gauß-Algorithmus

$$\begin{array}{ccc|c} 10 & 1 & -2 & 2 \\ 1 & 2 & 2 & 3 \\ 4 & 4 & 3 & 5 \end{array}$$

$$\begin{array}{ccc|c} 1 & 2 & 2 & 3 \\ 10 & 1 & -2 & 2 \\ 4 & 4 & 3 & 5 \end{array}$$

$$\begin{array}{ccc|c} 1 & 2 & 2 & 3 \\ 0 & -19 & -22 & -28 \\ 4 & 4 & 3 & 5 \end{array}$$

$$\begin{array}{ccc|c} 1 & 2 & 2 & 3 \\ 0 & -19 & -22 & -28 \\ 0 & -4 & -5 & -7 \end{array}$$

$$\begin{array}{ccc|c} 1 & 2 & 2 & 3 \\ 0 & -4 & -5 & -7 \\ 0 & -19 & -22 & -28 \end{array}$$

$$\begin{array}{ccc|c} 1 & 2 & 2 & 3 \\ 0 & 1 & \frac{5}{4} & \frac{7}{4} \\ 0 & -19 & -22 & -28 \end{array}$$

$$\begin{array}{ccc|c} 1 & 2 & 2 & 3 \\ 0 & 1 & \frac{5}{4} & \frac{7}{4} \\ 0 & 0 & \frac{7}{4} & \frac{21}{4} \end{array}$$

$$\begin{array}{ccc|c} 1 & 2 & 2 & 3 \\ 0 & 1 & \frac{5}{4} & \frac{7}{4} \\ 0 & 0 & 1 & 3 \end{array}$$

$$x_1 = 3 - 2x_2 - 2x_3 = 1;$$

$$x_2 = \frac{7}{4} - \frac{5}{4}x_3 = -2;$$

$$x_3 = 3;$$