

$$(a|b) \rightarrow a(a|b)^c(b|c)$$

$$1+1=0 \quad x = -\frac{4}{3}b$$

$$1+\Delta=\square \quad x$$

$$1+\Delta=-\square \quad x$$

$$\frac{1+\square=\Delta}{1=\square+\square+1}$$

$$10.15 \quad 2A, 4.$$

$$\begin{array}{r|rrrrr} + & 0 & 1 & \Delta & \square & \\ \hline 0 & 0 & 1 & \Delta & \square & \\ \hline 1 & 1 & 0 & \square & \Delta & \\ \hline \Delta & \Delta & \square & 0 & 1 & \\ \hline \square & \square & \Delta & 1 & 0 & \end{array}$$

$$\begin{array}{r|rrrrr} x & 0 & 1 & \Delta & \square & \\ \hline 0 & 0 & 0 & 0 & 0 & \\ \hline 1 & 0 & 1 & \Delta & \square & \\ \hline \Delta & 0 & \Delta & \square & 1 & \\ \hline \square & 0 & \square & 1 & \Delta & \end{array}$$

$$\Delta \cdot \square = \Delta(1+\Delta) = \Delta + \Delta^2$$

$$\square^2 = (1+\Delta)^2 = 1 + \Delta^2 + 2\Delta =$$

$$x_1 + 2x_2 = 1$$

$$3x_2 + 2x_3 = 0$$

$$ax_3 = b$$

$$x_3 = \frac{b}{a}$$

$$x_2 = -\frac{2b}{3a}$$

$$x_1 = 1 +$$

$$3A4. \left(\begin{array}{ccc|c} 1 & 2 & 0 & 1 \\ 0 & 3 & 2 & 0 \\ 0 & 0 & a & b \end{array} \right)$$

$$\begin{array}{r|rrr} 1 & 2 & 0 & 1 \\ \hline 0 & 3 & 2 & 0 \\ \hline 0 & 0 & a & b \end{array}$$

$$\Rightarrow x_1 = 1 + \frac{4b}{3a}, x_2 = -\frac{2b}{3a}, x_3 = \frac{b}{a}$$

$$\textcircled{1} a=0, b \neq 0 \quad \text{no solution.}$$

$$\textcircled{2} a=0, b=0 \quad \text{no solution.}$$

$$\textcircled{3} a \neq 0, b=0 \quad x_1=1, x_2=0, x_3=0.$$

$$\textcircled{4} a \neq 0, b \neq 0. \quad \text{infinity}$$