

1.

$$\begin{aligned} |A| &= 12 \\ |B| &= 13 \\ |C| &= 0 \end{aligned}$$

2.

$$\begin{aligned} |A| &= 90 \\ |B| &= -46 \\ |C| &= -100 \end{aligned}$$

3.

$$\begin{aligned} |A| &= 18 \\ |B| &= -28 \\ |C| &= -18 \end{aligned}$$

4.

$$A = \begin{pmatrix} 1 & 1 & -2 & -4 \\ 0 & 1 & 0 & -1 \\ -1 & -1 & 3 & 6 \\ 2 & 1 & -6 & -10 \end{pmatrix}$$

5.

$$A^{-1} = \frac{1}{3} \cdot \begin{pmatrix} -1+i & 1-2i \\ 1+2i & -1-i \end{pmatrix}; \quad B^{-1} \text{ neexistuje}; \quad C^{-1} = \frac{1}{2} \cdot \begin{pmatrix} 0 & 1 & 1 & 0 \\ 0 & 1 & 0 & -1 \\ 1 & -1 & 0 & 0 \\ 1 & -1 & -1 & 1 \end{pmatrix}$$

6.

$$\left(2, -\frac{3}{2}, \frac{3}{2}, 3\right); \quad \left\{ \left(1+t, \frac{3}{3}t, -\frac{1}{2}\right), t \in \mathbb{R} \right\}; \quad \emptyset$$

7.

$a=8$	$(s, 4+2s-2t, 3-2t, t), s, t \in \mathbb{R}$
$a \neq 8$	$(0, 4-2t, 3-2t, t), t \in \mathbb{R}$

$a=8$	$(s, 4+2s-2t, 3-2t, t), s, t \in \mathbb{R}$
$a \neq 8$	$(0, 4-2t, 3-2t, t), t \in \mathbb{R}$

$a=0$	$\left(\frac{-3}{2}-13t, -\frac{7}{2}-19t, 0, t\right), t \in \mathbb{R}$
$a \neq 0$	\emptyset

8.

$$\begin{aligned} &\left(-1, \frac{1}{2}, \frac{1}{3}\right) \\ &(3, 4, 5) \\ &\left(-3, 0, -\frac{1}{2}, \frac{2}{3}\right) \end{aligned}$$