

1.

$$\mathbf{A} = \begin{pmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 1 & 2 & 2 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 0.5 & 0.5 & -1 \\ -1.25 & -0.25 & 2 \\ 1 & 0 & -1 \end{pmatrix}$$

2.

$$\mathbf{A} = \begin{pmatrix} 2 & 2 & 3 \\ 4 & 2 & 1 \\ 1 & 2 & 2 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 0.25 & 0.25 & -0.5 \\ -0.875 & 0.125 & 1.25 \\ 0.75 & -0.25 & -0.5 \end{pmatrix}$$

3.

$$\mathbf{A} = \begin{pmatrix} \boxed{2} & \boxed{1} & \boxed{2} \\ \boxed{3} & \boxed{2} & \boxed{1} \\ \boxed{2} & \boxed{2} & \boxed{2} \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 0.5 & 0.5 & -0.75 \\ -1 & 0 & 1 \\ 0.5 & -0.5 & 0.25 \end{pmatrix}$$

4.

$$\mathbf{A} = \begin{pmatrix} \boxed{2} & \boxed{1} & \boxed{2} \\ \boxed{3} & \boxed{2} & \boxed{1} \\ \boxed{2} & \boxed{2} & \boxed{2} \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 0.5 & 0.5 & -0.75 \\ -1 & 0 & 1 \\ 0.5 & -0.5 & 0.25 \end{pmatrix}$$

5.

$$\mathbf{A} = \begin{pmatrix} 2 & 1 & 3 \\ 1 & 3 & 1 \\ 1 & -1 & 1 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} -1 & 1 & 2 \\ 0 & 0.25 & -0.25 \\ 1 & -0.75 & -1.25 \end{pmatrix}$$

6.

$$\mathbf{A} = \begin{pmatrix} 2 & 2 & 1 \\ 1 & 2 & -1 \\ 1 & -1 & 1 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} -0.2 & 0.6 & 0.8 \\ 0.4 & -0.2 & -0.6 \\ 0.6 & -0.8 & -0.4 \end{pmatrix}$$

7.

$$\mathbf{A} = \begin{pmatrix} 1 & 2 & 1 \\ 1 & 2 & -1 \\ -1 & -1 & 1 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 0.5 & -1.5 & -2 \\ 0 & 1 & 1 \\ 0.5 & -0.5 & 0 \end{pmatrix}$$

8.

$$\mathbf{A} = \begin{pmatrix} 1 & 2 & 1 \\ 1 & 3 & -1 \\ -1 & -1 & 1 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 0.5 & -0.75 & -1.25 \\ 0 & 0.5 & 0.5 \\ 0.5 & -0.25 & 0.25 \end{pmatrix}$$

9.

$$\mathbf{A} = \begin{pmatrix} -1 & 2 & 2 \\ 1 & 1 & -1 \\ 1 & -1 & -1 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 1 & 0 & 2 \\ 0 & 0.5 & -0.5 \\ 1 & -0.5 & 1.5 \end{pmatrix}$$

10.

$$\mathbf{A} = \begin{pmatrix} -1 & -1 & 2 \\ 1 & 1 & -1 \\ -1 & -2 & -1 \end{pmatrix}$$

$$\mathbf{A}^{-1} = \begin{pmatrix} 3 & 5 & 1 \\ -2 & -3 & -1 \\ 1 & 1 & 0 \end{pmatrix}$$