

$$y_{11}=1$$

$$\frac{1}{2}y_{11} + y_{21} = 0$$

$$y_{21} = -\frac{1}{2}$$

$$\frac{1}{3}y_{11} + \frac{1}{2}y_{21} + y_{31} = 0$$

$$\frac{1}{3} + \frac{1}{2} + y_{31} = 0$$

$$y_{31} = 0$$

$$y_{12}=0$$

$$\frac{1}{2}y_{12} + y_{22} = 1$$

$$y_{22} = 1$$

$$\frac{1}{3}y_{12} + \frac{1}{2}y_{22} + y_{32} = 0$$

$$0 + \frac{1}{2} + y_{32} = 0$$

$$y_{32} = -\frac{1}{2}$$

$$y_{13}=0$$

$$\frac{1}{2}y_{13} + y_{23} = 0$$

$$y_{23} = 0$$

$$\frac{1}{3}y_{13} + \frac{1}{2}y_{23} + y_{33} = 1$$

$$0 + 0 + y_{33} = 1$$

$$y_{33} = 1$$

$$Y = \begin{pmatrix} 1 & 0 & 0 \\ -\frac{1}{2} & 1 & 0 \\ 0 & -\frac{1}{2} & 1 \end{pmatrix} \quad \left| \begin{array}{l} 4x_{11} - 2 + 0 = 1 \\ 4x_{12} + 4 - 2 = 0 \\ 4x_{13} = 3 \end{array} \right. \quad \left| \begin{array}{l} 4x_{11} = 3 \\ 4x_{12} = -2 \\ x_{13} = -\frac{1}{2} \end{array} \right.$$

$$\begin{pmatrix} 1 & 0 & 0 \\ \frac{1}{2} & 1 & 0 \\ \frac{1}{2} & \frac{1}{2} & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 & 0 \\ -\frac{1}{2} & 1 & 0 \\ 0 & -\frac{1}{2} & 1 \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 \\ \frac{1}{2} - \frac{1}{2} & 0 + 1 & 0 \\ \frac{1}{2} - \frac{1}{4} & 0 + \frac{1}{2} & -\frac{1}{2} \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \quad \left| \begin{array}{l} 4x_{13} + 0 + 4 = 0 \\ 4x_{13} = -4 \\ x_{13} = -1 \end{array} \right.$$

$$4x_{11} + 8x_{21} + 8x_{31} = 1$$



$$4x_{13} + 8x_{23} + 8x_{33} = 0$$

$$4x_{12} + 8x_{22} + 8x_{32} = 0$$

$$2x_{21} = -\frac{1}{2}$$

$$x_{21} = -\frac{1}{4}$$

$$2x_{22} = 1$$

$$x_{22} = \frac{1}{2}$$

$$2x_{23} = 0$$

$$x_{23} = 0$$

$$2x_{31} = 0$$

$$x_{31} = 0$$

$$2x_{32} = -\frac{1}{2}$$

$$x_{32} = -\frac{1}{4}$$

$$2x_{33} = 1$$

$$x_{33} = \frac{1}{2}$$

$$X = \begin{pmatrix} \frac{3}{4} & -\frac{1}{2} & \frac{1}{2} \\ -\frac{1}{4} & \frac{1}{2} & 0 \\ 0 & -\frac{1}{4} & \frac{1}{2} \end{pmatrix}$$

$3 \times 3$  matrix  $\Rightarrow \det = 5 + 12 *$

-  $9 \times (2 + 1)$   $9 + 18 *$

- 9  $0 + 9 *$

- 6

$$\boxed{59}$$

$$6? \\ vs \\ 18$$