

9.

$$U = \begin{pmatrix} \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \\ \frac{1}{2} & \frac{1}{2} & -\frac{1}{2} & \frac{1}{2} \\ \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & -\frac{1}{2} \\ -\frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \end{pmatrix}$$

9-PSETS
m17 oco
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$$D_1 = \text{diag}(-1, 1, 1, 3)$$

$$D_2 = \text{diag}(2, 1, -1, 2)$$

$$\begin{pmatrix} -1/2 & 1/2 & 1/2 & -1/2 \end{pmatrix}^T = U_{-1,2}$$

$$\begin{pmatrix} 1/2 & 1/2 & 1/2 & 1/2 \end{pmatrix}^T = U_{1,1}$$

$$\begin{pmatrix} 1/2 & -1/2 & -1/2 & 1/2 \end{pmatrix}^T = U_{1,-1}$$

$$\begin{pmatrix} 1/2 & 1/2 & -1/2 & -1/2 \end{pmatrix}^T = U_{3,2}$$