

g-matrices of st-tilt(M\_4)

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[[ 1, 0, 0, 0],  
 [ 0, 1, 0, 0],  
 [ 0, 0, 1, 0],  
 [ 0, 0, 0, 1]]

-----  
[[ -1, 0, 0, 0],  
 [ 0, -1, 0, 0],  
 [ 0, 0, -1, 0],  
 [ 0, 0, 0, -1]]

-----  
[[ 0, 1, 0, -1],  
 [ 1, 0, 0, 0],  
 [ 0, 1, 0, 0],  
 [ 0, 0, 1, 0]]

-----  
[[ 0, 1, -1, 0],  
 [ 1, 0, 0, 0],  
 [ 0, 1, 0, 0],  
 [ 0, 0, 0, 1]]

-----  
[[ 1, -1, 1, 1],  
 [ 1, 0, 0, 0],  
 [ 0, 0, 1, 0],  
 [ 0, 0, 0, 1]]

-----  
[[ -1, 1, 0, 0],  
 [ 0, 1, 0, 0],  
 [ 0, 0, 1, 0],  
 [ 0, 0, 0, 1]]

-----  
[[ 0, 1, -1, 0],  
 [ 0, 1, 0, -1],  
 [ 1, 0, 0, 0],  
 [ 0, 1, 0, 0]]

-----  
[[ 1, 0, 1, -1],  
 [ 0, 1, 0, -1],  
 [ 1, 0, 0, 0],

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    [ 0, 0, 1, 0]]
-----
[[ -1, 1, 0, 0],
 [ 0, 1, 0, -1],
 [ 0, 1, 0, 0],
 [ 0, 0, 1, 0]]
-----
[[ 0, 0, -1, 1],
 [ 0, 1, -1, 0],
 [ 1, 0, 0, 0],
 [ 0, 0, 0, 1]]
-----
[[ -1, 1, 0, 0],
 [ 0, 1, -1, 0],
 [ 0, 1, 0, 0],
 [ 0, 0, 0, 1]]
-----
[[ 1, -1, 2, 0],
 [ 1, -1, 1, 1],
 [ 1, 0, 0, 0],
 [ 0, 0, 1, 0]]
-----
[[ 1, -1, 0, 1],
 [ 1, -1, 1, 1],
 [ 1, 0, 0, 0],
 [ 0, 0, 0, 1]]
-----
[[ 0, -1, 1, 1],
 [ 1, -1, 1, 1],
 [ 0, 0, 1, 0],
 [ 0, 0, 0, 1]]
-----
[[ -1, 0, 0, 1],
 [ -1, 1, 0, 0],
 [ 0, 0, 1, 0],
 [ 0, 0, 0, 1]]
-----
[[ 0, 1, -1, 0],
 [ 0, 1, 0, -1],
 [ 1, 0, 0, 0],
 [ 0, 1, -1, -1]]

```

-----  

$$\begin{bmatrix} -1, & 1, & 0, & 0 \\ 0, & 1, & -1, & 0 \\ 0, & 1, & 0, & -1 \\ 0, & 1, & 0, & 0 \end{bmatrix}$$

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$$\begin{bmatrix} 1, & 0, & 1, & -1 \\ 0, & 1, & 0, & -1 \\ 1, & 0, & 0, & 0 \\ 1, & 0, & 0, & -1 \end{bmatrix}$$

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$$\begin{bmatrix} 1, & 0, & 1, & -1 \\ 0, & 1, & 0, & -1 \\ 0, & 0, & 1, & 0 \\ 0, & 0, & 1, & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 1, & -1, & 2, & 0 \\ 1, & 0, & 1, & -1 \\ 1, & 0, & 0, & 0 \\ 0, & 0, & 1, & 0 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1, & 1, & 0, & 0 \\ 0, & 1, & 0, & -1 \\ 0, & 0, & 1, & 0 \\ -1, & 1, & 0, & -1 \end{bmatrix}$$

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$$\begin{bmatrix} 0, & 1, & -2, & 0 \\ 0, & 0, & -1, & 1 \\ 0, & 1, & -1, & 0 \\ 1, & 0, & 0, & 0 \end{bmatrix}$$

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$$\begin{bmatrix} -1, & 1, & -1, & 1 \\ 0, & 0, & -1, & 1 \\ 0, & 1, & -1, & 0 \\ 0, & 0, & 0, & 1 \end{bmatrix}$$

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$$\begin{bmatrix} 1, & -1, & 0, & 1 \\ 0, & 0, & -1, & 1 \\ 1, & 0, & 0, & 0 \\ 0, & 0, & 0, & 1 \end{bmatrix}$$

```

[[ -1,  1, -1,  1],
 [ -1,  1,  0,  0],
 [  0,  1, -1,  0],
 [  0,  0,  0,  1]]

```

```

-----
[[  1, -1,  1,  0],
 [  1, -1,  2,  0],
 [  1, -1,  1,  1],
 [  1,  0,  0,  0]]

```

```

-----
[[  0, -1,  1,  1],
 [  1, -1,  2,  0],
 [  1, -1,  1,  1],
 [  0,  0,  1,  0]]

```

```

-----
[[  1, -1,  1,  0],
 [  1, -1,  0,  1],
 [  1, -1,  1,  1],
 [  1,  0,  0,  0]]

```

```

-----
[[  0, -1,  1,  1],
 [  1, -1,  0,  1],
 [  1, -1,  1,  1],
 [  0,  0,  0,  1]]

```

```

-----
[[ -1,  0,  0,  1],
 [  0, -1,  1,  1],
 [  0,  0,  1,  0],
 [  0,  0,  0,  1]]

```

```

-----
[[  0,  0,  1,  0],
 [ -1,  1,  0,  0],
 [ -1,  0,  0,  1],
 [ -1,  0,  0,  0]]

```

```

-----
[[ -1,  1, -1,  1],
 [ -1,  0,  0,  1],
 [ -1,  1,  0,  0],
 [  0,  0,  0,  1]]

```

```

-----
[[ -1,  2, -1, -1],

```

$$\begin{bmatrix} 0, & 1, & -1, & 0 ], \\ 0, & 1, & 0, & -1 ], \\ 0, & 1, & -1, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} 0, & 1, & -2, & 0 ], \\ 0, & 1, & -1, & 0 ], \\ 1, & 0, & 0, & 0 ], \\ 0, & 1, & -1, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} 0, & 1, & 0, & -1 ], \\ 1, & 0, & 0, & 0 ], \\ 1, & 0, & 0, & -1 ], \\ 0, & 1, & -1, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} -1, & 2, & -1, & -1 ], \\ -1, & 1, & 0, & 0 ], \\ 0, & 1, & -1, & 0 ], \\ 0, & 1, & 0, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} 1, & 0, & 1, & -1 ], \\ 0, & 1, & 0, & -1 ], \\ 0, & 0, & 1, & -1 ], \\ 1, & 0, & 0, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} 1, & -1, & 1, & 0 ], \\ 1, & 0, & 1, & -1 ], \\ 1, & 0, & 0, & 0 ], \\ 1, & 0, & 0, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} 1, & -1, & 2, & 0 ], \\ 1, & 0, & 1, & -1 ], \\ 0, & 0, & 1, & 0 ], \\ 0, & 0, & 1, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} 0, & 1, & 0, & -1 ], \\ 0, & 0, & 1, & 0 ], \\ -1, & 1, & 0, & -1 ], \\ 0, & 0, & 1, & -1 ] ] \end{bmatrix}$$


---


$$\begin{bmatrix} 1, & -1, & 1, & 0 ], \\ 1, & -1, & 2, & 0 ], \end{bmatrix}$$

$$\begin{bmatrix} 1, & 0, & 1, & -1 ], \\ 1, & 0, & 0, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 2, & -1, & -1 ], \\ -1, & 1, & 0, & 0 ], \\ 0, & 1, & 0, & -1 ], \\ -1, & 1, & 0, & -1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & 0, & 1, & 0 ], \\ -1, & 1, & 0, & 0 ], \\ -1, & 1, & 0, & -1 ], \\ -1, & 0, & 0, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -1, & 0 ], \\ 0, & 1, & -2, & 0 ], \\ 0, & 0, & -1, & 1 ], \\ 0, & 1, & -1, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & 0, & 0, & 0 ], \\ 0, & 0, & -1, & 1 ], \\ 0, & 1, & -2, & 0 ], \\ 0, & 0, & -1, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -1, & 0 ], \\ -1, & 1, & -1, & 1 ], \\ 0, & 0, & -1, & 1 ], \\ 0, & 1, & -1, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 0, & 0, & 1 ], \\ -1, & 1, & -1, & 1 ], \\ 0, & 0, & -1, & 1 ], \\ 0, & 0, & 0, & 1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & 0, & 0, & 0 ], \\ 0, & 0, & -1, & 1 ], \\ 1, & -1, & 0, & 1 ], \\ 0, & 0, & -1, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 2 ], \\ 1, & -1, & 0, & 1 ], \\ 0, & 0, & -1, & 1 ], \end{bmatrix}$$

```

    [ 0, 0, 0, 1]]
-----
[[ -1, 1, -1, 0],
 [ -1, 1, -1, 1],
 [ -1, 1, 0, 0],
 [ 0, 1, -1, 0]]
-----
[[ 0, -1, 1, 1],
 [ 1, -1, 1, 0],
 [ 1, -1, 2, 0],
 [ 1, -1, 1, 1]]
-----
[[ 0, -1, 2, 0],
 [ 0, -1, 1, 1],
 [ 1, -1, 2, 0],
 [ 0, 0, 1, 0]]
-----
[[ 0, -1, 1, 1],
 [ 1, -1, 1, 0],
 [ 1, -1, 0, 1],
 [ 1, -1, 1, 1]]
-----
[[ 1, -1, 1, 0],
 [ 1, -1, 0, 1],
 [ 1, 0, 0, 0],
 [ 1, -1, 0, 0]]
-----
[[ 0, -1, 0, 2],
 [ 0, -1, 1, 1],
 [ 1, -1, 0, 1],
 [ 0, 0, 0, 1]]
-----
[[ 0, 0, 1, 0],
 [ 0, -1, 1, 1],
 [ -1, 0, 0, 1],
 [ -1, 0, 0, 0]]
-----
[[ 0, -1, 0, 2],
 [ -1, 0, 0, 1],
 [ 0, -1, 1, 1],
 [ 0, 0, 0, 1]]

```

-----  

$$\begin{bmatrix} -1 & 1 & -1 & 0 \\ -1 & 1 & 0 & 0 \\ -1 & 0 & 0 & 1 \\ -1 & 0 & 0 & 0 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1 & 1 & -1 & 0 \\ -1 & 1 & -1 & 1 \\ -1 & 0 & 0 & 1 \\ -1 & 1 & 0 & 0 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1 & 1 & -1 & 0 \\ -1 & 2 & -1 & -1 \\ 0 & 1 & -1 & 0 \\ 0 & 1 & -1 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1 & 2 & -1 & -1 \\ 0 & 1 & 0 & -1 \\ -1 & 1 & 0 & -1 \\ 0 & 1 & -1 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1 & 1 & -1 & 0 \\ 0 & 1 & -2 & 0 \\ 0 & 1 & -1 & 0 \\ 0 & 1 & -1 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & -2 & 0 \\ 0 & 1 & -1 & -1 \\ 0 & 0 & -1 & 0 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 0 & 1 & 0 & -1 \\ 0 & 1 & 0 & -2 \\ 1 & 0 & 0 & -1 \\ 0 & 1 & -1 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & -1 & -1 \\ 1 & 0 & 0 & -1 \\ 0 & 0 & -1 & 0 \end{bmatrix}$$



```

[[ -1,  1, -1,  0],
 [ -1,  2, -1, -1 ],
 [ -1,  1,  0,  0 ],
 [  0,  1, -1,  0 ]]

```

```

-----
[[  1, -1,  1,  0],
 [  1,  0,  1, -1 ],
 [  0,  0,  1, -1 ],
 [  1,  0,  0, -1 ]]

```

```

-----
[[  0,  1,  0, -1 ],
 [  0,  1,  0, -2 ],
 [  0,  0,  1, -1 ],
 [  1,  0,  0, -1 ]]

```

```

-----
[[  1, -1,  1,  0],
 [  1,  0,  0,  0 ],
 [  1,  0,  0, -1 ],
 [  1, -1,  0,  0 ]]

```

```

-----
[[  1, -1,  1,  0],
 [  1, -1,  2,  0 ],
 [  1,  0,  1, -1 ],
 [  0,  0,  1, -1 ]]

```

```

-----
[[  0, -1,  2,  0],
 [  1, -1,  2,  0 ],
 [  0,  0,  1,  0 ],
 [  0,  0,  1, -1 ]]

```

```

-----
[[  0,  1,  0, -1 ],
 [  0,  1,  0, -2 ],
 [ -1,  1,  0, -1 ],
 [  0,  0,  1, -1 ]]

```

```

-----
[[  0,  0,  1,  0],
 [  0,  0,  1, -1 ],
 [ -1,  1,  0, -1 ],
 [ -1,  0,  0,  0 ]]

```

```

-----
[[ -1,  1, -1,  0],

```

$$\begin{bmatrix} -1, & 2, & -1, & -1 \\ -1, & 1, & 0, & 0 \\ -1, & 1, & 0, & -1 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -1, & 0 \\ -1, & 1, & 0, & 0 \\ -1, & 1, & 0, & -1 \\ -1, & 0, & 0, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -2, & 0 \\ -1, & 1, & -1, & 0 \\ 0, & 1, & -2, & 0 \\ 0, & 0, & -1, & 1 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -2, & 0 \\ 0, & 0, & -1, & 1 \\ 0, & 1, & -2, & 0 \\ 0, & 0, & -1, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 0, & 0, & 1 \\ -1, & 1, & -1, & 0 \\ -1, & 1, & -1, & 1 \\ 0, & 0, & -1, & 1 \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 2 \\ -1, & 0, & 0, & 1 \\ 0, & 0, & -1, & 1 \\ 0, & 0, & 0, & 1 \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & 0, & 0, & 0 \\ 1, & -1, & 0, & 1 \\ 1, & -1, & 0, & 0 \\ 0, & 0, & -1, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 1 \\ 0, & 0, & -1, & 1 \\ 1, & -1, & 0, & 1 \\ 0, & 0, & -1, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 1 \\ 0, & -1, & 0, & 2 \end{bmatrix}$$

$$\begin{bmatrix} 1, & -1, & 0, & 1 ], \\ 0, & 0, & -1, & 1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 2, & 0 ], \\ 0, & -1, & 1, & 1 ], \\ 1, & -1, & 1, & 0 ], \\ 1, & -1, & 2, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & 0, & 1, & 0 ], \\ 0, & -1, & 1, & 1 ], \\ 0, & -1, & 2, & 0 ], \\ -1, & 0, & 0, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & -2, & 1, & 1 ], \\ 0, & -1, & 1, & 1 ], \\ 1, & -1, & 1, & 0 ], \\ 1, & -1, & 0, & 1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & -2, & 1, & 1 ], \\ 1, & -1, & 1, & 0 ], \\ 1, & -1, & 0, & 1 ], \\ 1, & -1, & 0, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 1 ], \\ 0, & -1, & 0, & 2 ], \\ 0, & -1, & 1, & 1 ], \\ 1, & -1, & 0, & 1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 1 ], \\ 0, & -1, & 1, & 1 ], \\ -1, & 0, & 0, & 1 ], \\ -1, & 0, & 0, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 1 ], \\ 0, & -1, & 0, & 2 ], \\ -1, & 0, & 0, & 1 ], \\ 0, & -1, & 1, & 1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 0, & -1, & 1 ], \\ -1, & 1, & -1, & 0 ], \\ -1, & 0, & 0, & 1 ], \end{bmatrix}$$

[ -1, 0, 0, 0 ]]

-----

[[ -1, 1, -1, 0 ],  
[ -1, 2, -1, -1 ],  
[ -1, 1, 0, -1 ],  
[ 0, 1, -1, -1 ]]

-----

[[ 0, 1, 0, -1 ],  
[ 0, 1, 0, -2 ],  
[ -1, 1, 0, -1 ],  
[ 0, 1, -1, -1 ]]

-----

[[ -1, 1, -2, 0 ],  
[ -1, 1, -1, 0 ],  
[ 0, 1, -2, 0 ],  
[ 0, 1, -1, -1 ]]

-----

[[ -1, 1, -2, 0 ],  
[ 0, 1, -2, 0 ],  
[ 0, 1, -1, -1 ],  
[ 0, 0, -1, 0 ]]

-----

[[ 0, 1, 0, -2 ],  
[ 0, 1, -1, -1 ],  
[ 1, 0, 0, -1 ],  
[ 0, 0, 0, -1 ]]

-----

[[ 1, 0, 0, -1 ],  
[ 0, 1, -1, -1 ],  
[ 0, 0, -1, 0 ],  
[ 0, 0, 0, -1 ]]

-----

[[ 1, 0, 0, 0 ],  
[ 1, 0, 0, -1 ],  
[ 1, -1, 0, 0 ],  
[ 0, 0, -1, 0 ]]

-----

[[ 1, -1, 1, 0 ],  
[ 1, -1, 1, -1 ],  
[ 0, 0, 1, -1 ],  
[ 1, 0, 0, -1 ]]

-----  

$$\begin{bmatrix} 0 & 0 & 1 & -1 \\ 0 & 1 & 0 & -2 \\ 1 & 0 & 0 & -1 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 1 & -1 & 1 & 0 \\ 1 & -1 & 1 & -1 \\ 1 & 0 & 0 & -1 \\ 1 & -1 & 0 & 0 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 0 & -1 & 2 & 0 \\ 1 & -1 & 1 & 0 \\ 1 & -1 & 2 & 0 \\ 0 & 0 & 1 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & -1 & 2 & 0 \\ 0 & 0 & 1 & -1 \\ -1 & 0 & 0 & 0 \end{bmatrix}$$

-----  

$$\begin{bmatrix} 0 & 0 & 1 & -1 \\ -1 & 1 & 0 & -1 \\ 0 & 1 & 0 & -2 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1 & 1 & 0 & -1 \\ 0 & 0 & 1 & -1 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1 & 1 & -1 & 0 \\ -1 & 1 & 0 & -1 \\ -1 & 1 & -1 & -1 \\ -1 & 0 & 0 & 0 \end{bmatrix}$$

-----  

$$\begin{bmatrix} -1 & 0 & -1 & 1 \\ -1 & 1 & -2 & 0 \\ -1 & 1 & -1 & 0 \\ 0 & 0 & -1 & 1 \end{bmatrix}$$

$\begin{bmatrix} -1, & 0, & -1, & 1 \\ -1, & 1, & -2, & 0 \\ 0, & 0, & -1, & 1 \\ 0, & 0, & -1, & 0 \end{bmatrix}$

-----  
 $\begin{bmatrix} -1, & 0, & -1, & 1 \\ -1, & 0, & 0, & 1 \\ -1, & 1, & -1, & 0 \\ 0, & 0, & -1, & 1 \end{bmatrix}$

-----  
 $\begin{bmatrix} 0, & -1, & 0, & 1 \\ 0, & -1, & 0, & 2 \\ -1, & 0, & 0, & 1 \\ 0, & 0, & -1, & 1 \end{bmatrix}$

-----  
 $\begin{bmatrix} 0, & -1, & 0, & 1 \\ 1, & -1, & 0, & 1 \\ 1, & -1, & 0, & 0 \\ 0, & 0, & -1, & 0 \end{bmatrix}$

-----  
 $\begin{bmatrix} -1, & 0, & -1, & 1 \\ 0, & -1, & 0, & 1 \\ 0, & 0, & -1, & 1 \\ 0, & 0, & -1, & 0 \end{bmatrix}$

-----  
 $\begin{bmatrix} 0, & -1, & 2, & 0 \\ 0, & -1, & 1, & 1 \\ 1, & -1, & 1, & 0 \\ 0, & -1, & 1, & 0 \end{bmatrix}$

-----  
 $\begin{bmatrix} 0, & -1, & 1, & 1 \\ 0, & -1, & 2, & 0 \\ 0, & -1, & 1, & 0 \\ -1, & 0, & 0, & 0 \end{bmatrix}$

-----  
 $\begin{bmatrix} 1, & -2, & 1, & 1 \\ 0, & -1, & 1, & 1 \\ 1, & -1, & 1, & 0 \\ 0, & -1, & 1, & 0 \end{bmatrix}$

-----  
 $\begin{bmatrix} 0, & -1, & 0, & 1, \end{bmatrix}$

$$\begin{bmatrix} 1, & -2, & 1, & 1 \\ 0, & -1, & 1, & 1 \\ 1, & -1, & 0, & 1 \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & -2, & 1, & 1 \\ 1, & -1, & 1, & 0 \\ 0, & -1, & 1, & 0 \\ 1, & -1, & 0, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 1 \\ 1, & -2, & 1, & 1 \\ 1, & -1, & 0, & 1 \\ 1, & -1, & 0, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 0, & 1 \\ 0, & -1, & 1, & 1 \\ 0, & -1, & 1, & 0 \\ -1, & 0, & 0, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 0, & -1, & 1 \\ 0, & -1, & 0, & 1 \\ -1, & 0, & 0, & 1 \\ -1, & 0, & 0, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -2, & 0 \\ -1, & 0, & -1, & 1 \\ -1, & 1, & -1, & 0 \\ -1, & 0, & 0, & 0 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -1, & 0 \\ -1, & 1, & 0, & -1 \\ -1, & 1, & -1, & -1 \\ 0, & 1, & -1, & -1 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & 0, & -1 \\ 0, & 1, & 0, & -2 \\ 0, & 1, & -1, & -1 \\ 0, & 0, & 0, & -1 \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -2, & 0 \\ -1, & 1, & -1, & 0 \end{bmatrix}$$

$$\begin{bmatrix} -1, & 1, & -1, & -1 ], \\ [ & 0, & 1, & -1, & -1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -2, & 0 ], \\ [ & -1, & 1, & -1, & -1 ], \\ [ & 0, & 1, & -1, & -1 ], \\ [ & 0, & 0, & -1, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & 0, & 0, & -1 ], \\ [ & 1, & -1, & 0, & 0 ], \\ [ & 0, & 0, & -1, & 0 ], \\ [ & 0, & 0, & 0, & -1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} -1, & 1, & -1, & -1 ], \\ [ & 0, & 1, & -1, & -1 ], \\ [ & 0, & 0, & -1, & 0 ], \\ [ & 0, & 0, & 0, & -1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & 0, & 1, & -1 ], \\ [ & 1, & -1, & 1, & -1 ], \\ [ & 1, & 0, & 0, & -1 ], \\ [ & 0, & 0, & 0, & -1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & -1, & 1, & 0 ], \\ [ & 0, & -1, & 1, & 0 ], \\ [ & 1, & -1, & 1, & -1 ], \\ [ & 0, & 0, & 1, & -1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & -1, & 1, & -1 ], \\ [ & 1, & 0, & 0, & -1 ], \\ [ & 1, & -1, & 0, & 0 ], \\ [ & 0, & 0, & 0, & -1 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 1, & -1, & 1, & 0 ], \\ [ & 0, & -1, & 1, & 0 ], \\ [ & 1, & -1, & 1, & -1 ], \\ [ & 1, & -1, & 0, & 0 ] ] \end{bmatrix}$$

-----

$$\begin{bmatrix} 0, & -1, & 2, & 0 ], \\ [ & 1, & -1, & 1, & 0 ], \\ [ & 0, & -1, & 1, & 0 ], \end{bmatrix}$$



[ 0, 0, 1, -1 ]]

-----

[[ 0, -1, 2, 0 ],  
[ 0, -1, 1, 0 ],  
[ 0, 0, 1, -1 ],  
[ -1, 0, 0, 0 ]]

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[[ -1, 1, 0, -1 ],  
[ -1, 1, -1, -1 ],  
[ -1, 0, 0, 0 ],  
[ 0, 0, 0, -1 ]]

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[[ 0, -1, 1, 0 ],  
[ 0, 0, 1, -1 ],  
[ -1, 0, 0, 0 ],  
[ 0, 0, 0, -1 ]]

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[[ -1, 1, -2, 0 ],  
[ -1, 1, -1, 0 ],  
[ -1, 1, -1, -1 ],  
[ -1, 0, 0, 0 ]]

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[[ -1, 1, -2, 0 ],  
[ -1, 0, -1, 1 ],  
[ -1, 0, 0, 0 ],  
[ 0, 0, -1, 0 ]]

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[[ 0, -1, 0, 1 ],  
[ -1, 0, -1, 1 ],  
[ -1, 0, 0, 1 ],  
[ 0, 0, -1, 1 ]]

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[[ 0, -1, 0, 1 ],  
[ 1, -1, 0, 0 ],  
[ 0, -1, 0, 0 ],  
[ 0, 0, -1, 0 ]]

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[[ 0, -1, 0, 1 ],  
[ -1, 0, -1, 1 ],  
[ -1, 0, 0, 0 ],  
[ 0, 0, -1, 0 ]]

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$$\begin{bmatrix} 0 & -1 & 0 & 1 \\ 1 & -2 & 1 & 1 \\ 0 & -1 & 1 & 1 \\ 0 & -1 & 1 & 0 \end{bmatrix}$$

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$$\begin{bmatrix} 0 & -1 & 0 & 1 \\ 1 & -2 & 1 & 1 \\ 0 & -1 & 1 & 0 \\ 1 & -1 & 0 & 0 \end{bmatrix}$$

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$$\begin{bmatrix} 0 & -1 & 0 & 1 \\ 0 & -1 & 1 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \end{bmatrix}$$

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$$\begin{bmatrix} -1 & 1 & 0 & -1 \\ 0 & 1 & -1 & -1 \\ -1 & 1 & -1 & -1 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$

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$$\begin{bmatrix} -1 & 1 & -2 & 0 \\ -1 & 1 & -1 & -1 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$$

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$$\begin{bmatrix} 1 & -1 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$

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$$\begin{bmatrix} -1 & 1 & -1 & -1 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$

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$$\begin{bmatrix} 0 & -1 & 1 & 0 \\ 0 & 0 & 1 & -1 \\ 1 & -1 & 1 & -1 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$

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[[ 0, -1, 1, 0],
 [ 1, -1, 1, -1],
 [ 1, -1, 0, 0],
 [ 0, 0, 0, -1]]
```

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[[ 0, -1, 1, 0],
 [ -1, 0, 0, 0],
 [ 0, -1, 0, 0],
 [ 0, 0, 0, -1]]
```

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```
[[ 0, -1, 0, 1],
 [ -1, 0, 0, 0],
 [ 0, -1, 0, 0],
 [ 0, 0, -1, 0]]
```

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[[ 0, -1, 0, 1],
 [ 0, -1, 1, 0],
 [ 1, -1, 0, 0],
 [ 0, -1, 0, 0]]
```

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[[ 0, -1, 1, 0],
 [ 1, -1, 0, 0],
 [ 0, -1, 0, 0],
 [ 0, 0, 0, -1]]
```

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