

ONE-DIMENSIONAL DERIVATIVES WITH DIRICHLET BOUNDARY CONDITIONS

3-Point Grid ($\Delta x = 1$)

$$[D_x]_{3 \times 1} = \begin{bmatrix} 0 & 0.5 & 0 \\ -0.5 & 0 & 0.5 \\ 0 & -0.5 & 0 \end{bmatrix}$$

$$[D_x^2]_{3 \times 1} = \begin{bmatrix} -2 & 1 & 0 \\ 1 & -2 & 1 \\ 0 & 1 & -2 \end{bmatrix}$$

3-Point Grid ($\Delta x = 0.25$)

$$[D_x]_{3 \times 1} = \begin{bmatrix} 0 & 2 & 0 \\ -2 & 0 & 2 \\ 0 & -2 & 0 \end{bmatrix}$$

$$[D_x^2]_{3 \times 1} = \begin{bmatrix} -32 & 16 & 0 \\ 16 & -32 & 16 \\ 0 & 16 & -32 \end{bmatrix}$$

4-Point Grid ($\Delta x = 1$)

$$[D_x]_{4 \times 1} = \begin{bmatrix} 0 & 0.5 & 0 & 0 \\ -0.5 & 0 & 0.5 & 0 \\ 0 & -0.5 & 0 & 0.5 \\ 0 & 0 & -0.5 & 0 \end{bmatrix}$$

$$[D_x^2]_{4 \times 1} = \begin{bmatrix} -2 & 1 & 0 & 0 \\ 1 & -2 & 1 & 0 \\ 0 & 1 & -2 & 1 \\ 0 & 0 & 1 & -2 \end{bmatrix}$$

4-Point Grid ($\Delta x = 0.15$)

$$[D_x]_{4 \times 1} = \begin{bmatrix} 0 & 3.33 & 0 & 0 \\ -3.33 & 0 & 3.33 & 0 \\ 0 & -3.33 & 0 & 3.33 \\ 0 & 0 & -3.33 & 0 \end{bmatrix}$$

$$[D_x^2]_{4 \times 4} = \begin{bmatrix} -88.89 & 44.44 & 0 & 0 \\ 44.44 & -88.89 & 44.44 & 0 \\ 0 & 44.44 & -88.89 & 44.44 \\ 0 & 0 & 44.44 & -88.89 \end{bmatrix}$$

10-Point Grid ($\Delta x = 1$)

$$[D_x]_{10 \times 10} = \begin{bmatrix} 0 & 0.5 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -0.5 & 0 & 0.5 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -0.5 & 0 & 0.5 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -0.5 & 0 & 0.5 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -0.5 & 0 & 0.5 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -0.5 & 0 & 0.5 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -0.5 & 0 & 0.5 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -0.5 & 0 & 0.5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -0.5 & 0 & 0.5 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -0.5 & 0 \end{bmatrix}$$

$$[D_x^2]_{10 \times 10} = \begin{bmatrix} -2 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & -2 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & -2 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & -2 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & -2 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & -2 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & -2 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & -2 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -2 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -2 \end{bmatrix}$$

10-Point Grid ($\Delta x = 0.4$)

$$\begin{aligned}
 [D_x]_{10 \times 1} &= \begin{bmatrix} 0 & 1.25 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -1.25 & 0 & 1.25 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1.25 & 0 & 1.25 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1.25 & 0 & 1.25 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1.25 & 0 & 1.25 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1.25 & 0 & 1.25 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1.25 & 0 & 1.25 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1.25 & 0 & 1.25 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1.25 & 0 & 1.25 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1.25 & 0 \end{bmatrix} \\
 [D_x^2]_{10 \times 1} &= \begin{bmatrix} -12.5 & 6.25 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 6.25 & -12.5 & 6.25 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 6.25 & -12.5 & 6.25 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 6.25 & -12.5 & 6.25 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 6.25 & -12.5 & 6.25 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 6.25 & -12.5 & 6.25 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 6.25 & -12.5 & 6.25 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 6.25 & -12.5 & 6.25 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 6.25 & -12.5 & 6.25 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 6.25 & -12.5 \end{bmatrix}
 \end{aligned}$$

TWO-DIMENSIONAL DERIVATIVES WITH DIRICHLET BOUNDARY CONDITIONS

3x3 Grid ($\Delta x = 1$ and $\Delta y = 1$)

DX =

```
[ 0 0.5 0 0 0 0 0 0 0 ]
[ -0.5 0 0.5 0 0 0 0 0 0 ]
[ 0 -0.5 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0.5 0 0 0 0 ]
[ 0 0 0 -0.5 0 0.5 0 0 0 ]
[ 0 0 0 0 -0.5 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0.5 0 ]
[ 0 0 0 0 0 0 -0.5 0 0.5 ]
[ 0 0 0 0 0 0 0 -0.5 0 ]
```

DX2 =

```
[ -2 1 0 0 0 0 0 0 0 ]
[ 1 -2 1 0 0 0 0 0 0 ]
[ 0 1 -2 0 0 0 0 0 0 ]
[ 0 0 0 -2 1 0 0 0 0 ]
[ 0 0 0 1 -2 1 0 0 0 ]
[ 0 0 0 0 1 -2 0 0 0 ]
[ 0 0 0 0 0 0 -2 1 0 ]
[ 0 0 0 0 0 0 1 -2 1 ]
[ 0 0 0 0 0 0 0 1 -2 ]
```

DY =

```
[ 0 0 0 0.5 0 0 0 0 0 ]
[ 0 0 0 0 0.5 0 0 0 0 ]
[ 0 0 0 0 0 0.5 0 0 0 ]
[ -0.5 0 0 0 0 0 0.5 0 0 ]
[ 0 -0.5 0 0 0 0 0 0.5 0 ]
[ 0 0 -0.5 0 0 0 0 0 0.5 ]
[ 0 0 0 -0.5 0 0 0 0 0 ]
[ 0 0 0 0 -0.5 0 0 0 0 ]
[ 0 0 0 0 0 -0.5 0 0 0 ]
```

DY2 =

```
[ -2 0 0 1 0 0 0 0 0 ]
[ 0 -2 0 0 1 0 0 0 0 ]
[ 0 0 -2 0 0 1 0 0 0 ]
[ 1 0 0 -2 0 0 1 0 0 ]
[ 0 1 0 0 -2 0 0 1 0 ]
[ 0 0 1 0 0 -2 0 0 1 ]
[ 0 0 0 1 0 0 -2 0 0 ]
[ 0 0 0 0 1 0 0 -2 0 ]
[ 0 0 0 0 0 1 0 0 -2 ]
```

3x3 Grid ($\Delta x = 0.15$ and $\Delta y = 0.25$)

DX =

```
[ 0 3.3333 0 0 0 0 0 0 0 ]
[ -3.3333 0 3.3333 0 0 0 0 0 0 ]
[ 0 -3.3333 0 0 0 0 0 0 0 ]
[ 0 0 0 0 3.3333 0 0 0 0 ]
[ 0 0 0 -3.3333 0 3.3333 0 0 0 ]
[ 0 0 0 0 -3.3333 0 0 0 0 ]
[ 0 0 0 0 0 0 0 3.3333 0 ]
[ 0 0 0 0 0 0 0 -3.3333 3.3333 ]
[ 0 0 0 0 0 0 0 0 -3.3333 ]
```

DX2 =

```
[ -88.8889 44.4444 0 0 0 0 0 0 0 ]
[ 44.4444 -88.8889 44.4444 0 0 0 0 0 0 ]
[ 0 44.4444 -88.8889 0 0 0 0 0 0 ]
[ 0 0 0 -88.8889 44.4444 0 0 0 0 ]
[ 0 0 0 44.4444 -88.8889 44.4444 0 0 0 ]
[ 0 0 0 0 44.4444 -88.8889 0 0 0 ]
[ 0 0 0 0 0 0 -88.8889 44.4444 0 ]
[ 0 0 0 0 0 0 44.4444 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 44.4444 -88.8889 ]
```

DY =

```
[ 0 0 0 2 0 0 0 0 0 ]
[ 0 0 0 0 2 0 0 0 0 ]
[ 0 0 0 0 0 2 0 0 0 ]
[ -2 0 0 0 0 0 2 0 0 ]
[ 0 -2 0 0 0 0 0 2 0 ]
[ 0 0 -2 0 0 0 0 0 2 ]
[ 0 0 0 -2 0 0 0 0 0 ]
[ 0 0 0 0 -2 0 0 0 0 ]
[ 0 0 0 0 0 -2 0 0 0 ]
```

DY2 =

```
[ -32 0 0 16 0 0 0 0 0 ]
[ 0 -32 0 0 16 0 0 0 0 ]
[ 0 0 -32 0 0 16 0 0 0 ]
[ 16 0 0 -32 0 0 16 0 0 ]
[ 0 16 0 0 -32 0 0 16 0 ]
[ 0 0 16 0 0 -32 0 0 16 ]
[ 0 0 0 16 0 0 -32 0 0 ]
[ 0 0 0 0 16 0 0 -32 0 ]
[ 0 0 0 0 0 16 0 0 -32 ]
```

3x5 Grid ($\Delta x = 1$ and $\Delta y = 1$)

DX =

```
[ 0 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ -0.5 0 0.5 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0.5 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 -0.5 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0.5 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0.5 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 ]
```

DX2 =

```
[ -2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 1 -2 1 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 1 -2 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -2 1 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 1 -2 1 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 1 -2 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -2 1 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 1 -2 1 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 1 -2 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -2 1 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 1 -2 1 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 1 -2 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -2 1 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 1 -2 1 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 1 -2 ]
```

DY =

```
[ 0 0 0 0.5 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0.5 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0.5 0 0 0 0 0 0 0 0 0 ]
[ -0.5 0 0 0 0 0 0.5 0 0 0 0 0 0 0 0 ]
[ 0 -0.5 0 0 0 0 0 0.5 0 0 0 0 0 0 0 ]
[ 0 0 -0.5 0 0 0 0 0 0.5 0 0 0 0 0 0 ]
[ 0 0 0 -0.5 0 0 0 0 0 0.5 0 0 0 0 0 ]
[ 0 0 0 0 -0.5 0 0 0 0 0 0.5 0 0 0 0 ]
[ 0 0 0 0 0 -0.5 0 0 0 0 0 0.5 0 0 0 ]
[ 0 0 0 0 0 0 -0.5 0 0 0 0 0 0.5 0 0 ]
[ 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0.5 0 ]
[ 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0.5 ]
[ 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 ]
```

DY2 =

```
[ -2 0 0 1 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -2 0 0 1 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -2 0 0 1 0 0 0 0 0 0 0 0 0 ]
[ 1 0 0 -2 0 0 1 0 0 0 0 0 0 0 0 ]
[ 0 1 0 0 -2 0 0 1 0 0 0 0 0 0 0 ]
[ 0 0 0 1 0 0 -2 0 0 1 0 0 0 0 0 ]
[ 0 0 0 0 1 0 0 -2 0 0 1 0 0 0 0 ]
[ 0 0 0 0 0 1 0 0 -2 0 0 1 0 0 0 ]
[ 0 0 0 0 0 0 1 0 0 -2 0 0 1 0 0 ]
[ 0 0 0 0 0 0 0 1 0 0 -2 0 0 1 0 ]
[ 0 0 0 0 0 0 0 0 1 0 0 -2 0 0 1 ]
[ 0 0 0 0 0 0 0 0 0 1 0 0 -2 0 1 ]
[ 0 0 0 0 0 0 0 0 0 0 1 0 0 -2 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 1 0 0 -2 ]
```

5x3 Grid ($\Delta x = 1$ and $\Delta y = 1$)

$Dx =$

```
[ 0 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ -0.5 0 0.5 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -0.5 0 0.5 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -0.5 0 0.5 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -0.5 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 ]
```

$Dx2 =$

```
[ -2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 1 -2 1 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 1 -2 1 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 1 -2 1 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 1 -2 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 -2 1 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 1 -2 1 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 1 -2 1 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 1 -2 1 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 1 -2 1 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 1 -2 1 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 1 -2 1 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 1 -2 1 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 1 -2 ]
```

$Dy =$

```
[ 0 0 0 0 0 0.5 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0.5 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0.5 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0.5 0 0 0 0 0 0 ]
[ -0.5 0 0 0 0 0 0 0 0 0.5 0 0 0 0 0 ]
[ 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 0 0 0 ]
[ 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 0 0 ]
[ 0 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 0 ]
[ 0 0 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 ]
[ 0 0 0 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 ]
[ 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 ]
```

$Dy2 =$

```
[ -2 0 0 0 0 1 0 0 0 0 0 0 0 0 0 ]
[ 0 -2 0 0 0 0 1 0 0 0 0 0 0 0 0 ]
[ 0 0 -2 0 0 0 0 1 0 0 0 0 0 0 0 ]
[ 0 0 0 -2 0 0 0 0 1 0 0 0 0 0 0 ]
[ 1 0 0 0 0 -2 0 0 0 0 1 0 0 0 0 ]
[ 0 1 0 0 0 0 -2 0 0 0 0 1 0 0 0 ]
[ 0 0 1 0 0 0 0 -2 0 0 0 0 1 0 0 ]
[ 0 0 0 1 0 0 0 0 -2 0 0 0 0 1 0 ]
[ 0 0 0 0 1 0 0 0 0 -2 0 0 0 0 1 ]
[ 0 0 0 0 0 1 0 0 0 0 -2 0 0 0 0 ]
[ 0 0 0 0 0 0 1 0 0 0 0 -2 0 0 0 ]
[ 0 0 0 0 0 0 0 1 0 0 0 0 -2 0 0 ]
[ 0 0 0 0 0 0 0 0 1 0 0 0 0 -2 0 ]
[ 0 0 0 0 0 0 0 0 0 1 0 0 0 0 -2 ]
[ 0 0 0 0 0 0 0 0 0 0 1 0 0 0 -2 ]
```

3x5 Grid ($\Delta x = 0.15$ and $\Delta y = 0.25$)

DX =

```
[ 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -3.3333 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 3.3333 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 -3.3333 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 ]
```

DX2 =

```
[ -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 44.4444 -88.8889 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 44.4444 -88.8889 -88.8889 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 44.4444 -88.8889 -88.8889 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -88.8889 44.4444 44.4444 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 -88.8889 0 0 ]
[ 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 -88.8889 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 44.4444 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 -88.8889 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 ]
```

DY =

```
[ 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 ]
[ -2 0 0 0 0 0 2 0 0 0 0 0 0 0 0 ]
[ 0 -2 0 0 0 0 0 2 0 0 0 0 0 0 0 ]
[ 0 0 -2 0 0 0 0 0 2 0 0 0 0 0 0 ]
[ 0 0 0 -2 0 0 0 0 0 2 0 0 0 0 0 ]
[ 0 0 0 0 -2 0 0 0 0 0 2 0 0 0 0 ]
[ 0 0 0 0 0 -2 0 0 0 0 0 2 0 0 0 ]
[ 0 0 0 0 0 0 -2 0 0 0 0 0 2 0 0 ]
[ 0 0 0 0 0 0 0 -2 0 0 0 0 0 2 0 ]
[ 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 2 ]
[ 0 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -2 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -2 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 ]
```

DY2 =

```
[ -32 0 0 16 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -32 0 0 16 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -32 0 0 16 0 0 0 0 0 0 0 0 0 ]
[ 16 0 0 -32 0 0 16 0 0 0 0 0 0 0 0 ]
[ 0 16 0 0 -32 0 0 16 0 0 0 0 0 0 0 ]
[ 0 0 16 0 0 -32 0 0 16 0 0 0 0 0 0 ]
[ 0 0 0 16 0 0 -32 0 0 16 0 0 0 0 0 ]
[ 0 0 0 0 16 0 0 -32 0 0 16 0 0 0 0 ]
[ 0 0 0 0 0 16 0 0 -32 0 0 16 0 0 0 ]
[ 0 0 0 0 0 0 16 0 0 -32 0 0 16 0 0 ]
[ 0 0 0 0 0 0 0 16 0 0 -32 0 0 16 0 ]
[ 0 0 0 0 0 0 0 0 16 0 0 -32 0 0 16 ]
[ 0 0 0 0 0 0 0 0 0 16 0 0 -32 0 16 ]
[ 0 0 0 0 0 0 0 0 0 0 16 0 0 -32 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 16 0 0 -32 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 16 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 16 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 16 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
```


5x3 Grid ($\Delta x = 0.15$ and $\Delta y = 0.25$)

DX =

```
[ 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -3.3333 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 3.3333 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 3.3333 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -3.3333 3.3333 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 3.3333 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 3.3333 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 3.3333 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 3.3333 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 3.3333 ]
```

DX2 =

```
[ -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 44.4444 -88.8889 ]
```

DY =

```
[ 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 ]
[ -2 0 0 0 0 0 0 0 0 0 2 0 0 0 0 ]
[ 0 -2 0 0 0 0 0 0 0 0 0 2 0 0 0 ]
[ 0 0 -2 0 0 0 0 0 0 0 0 0 2 0 0 ]
[ 0 0 0 -2 0 0 0 0 0 0 0 0 0 2 0 ]
[ 0 0 0 0 -2 0 0 0 0 0 0 0 0 0 2 ]
[ 0 0 0 0 0 -2 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -2 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -2 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 0 ]
```

DY2 =

```
[ -32 0 0 0 0 16 0 0 0 0 0 0 0 0 0 ]
[ 0 -32 0 0 0 0 16 0 0 0 0 0 0 0 0 ]
[ 0 0 -32 0 0 0 0 16 0 0 0 0 0 0 0 ]
[ 0 0 0 -32 0 0 0 0 16 0 0 0 0 0 0 ]
[ 0 0 0 0 -32 0 0 0 0 16 0 0 0 0 0 ]
[ 16 0 0 0 0 -32 0 0 0 0 16 0 0 0 0 ]
[ 0 16 0 0 0 0 -32 0 0 0 0 16 0 0 0 ]
[ 0 0 16 0 0 0 0 -32 0 0 0 0 16 0 0 ]
[ 0 0 0 16 0 0 0 0 -32 0 0 0 0 16 0 ]
[ 0 0 0 0 16 0 0 0 0 -32 0 0 0 0 16 ]
[ 0 0 0 0 0 16 0 0 0 0 -32 0 0 0 16 ]
[ 0 0 0 0 0 0 16 0 0 0 0 -32 0 0 0 ]
[ 0 0 0 0 0 0 0 16 0 0 0 0 -32 0 0 ]
[ 0 0 0 0 0 0 0 0 16 0 0 0 0 -32 0 ]
[ 0 0 0 0 0 0 0 0 0 16 0 0 0 0 -32 ]
```

4x4 Grid ($\Delta x = 1$ and $\Delta y = 1$)

DX =

```
[ 0 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ -0.5 0 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -0.5 0 0.5 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0.5 0 0.5 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0.5 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 0.5 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 ]
```

DX2 =

```
[ -2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 1 -2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 1 -2 1 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 1 -2 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 -2 1 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 1 -2 1 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 1 -2 1 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -2 1 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 1 -2 1 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 1 -2 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -2 1 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -2 1 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 1 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 1 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 ]
```

DY =

```
[ 0 0 0 0 0.5 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0.5 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0.5 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0.5 0 0 0 0 0 0 0 ]
[ -0.5 0 0 0 0 0 0 0 0 0.5 0 0 0 0 0 0 ]
[ 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 0 0 0 0 ]
[ 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 0 0 0 ]
[ 0 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 0 0 ]
[ 0 0 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 0 ]
[ 0 0 0 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 0 ]
[ 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 0 0 0.5 ]
[ 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 0 0.5 ]
[ 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 0.5 ]
[ 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -0.5 0 0 0 0 ]
```

DY2 =

```
[ -2 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -2 0 0 0 1 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -2 0 0 0 1 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -2 0 0 0 1 0 0 0 0 0 0 0 0 ]
[ 1 0 0 0 -2 0 0 0 1 0 0 0 0 0 0 0 ]
[ 0 1 0 0 0 -2 0 0 0 1 0 0 0 0 0 0 ]
[ 0 0 1 0 0 0 -2 0 0 0 1 0 0 0 0 0 ]
[ 0 0 0 1 0 0 0 -2 0 0 0 1 0 0 0 0 ]
[ 0 0 0 0 1 0 0 0 -2 0 0 0 1 0 0 0 ]
[ 0 0 0 0 0 1 0 0 0 -2 0 0 0 1 0 0 ]
[ 0 0 0 0 0 0 1 0 0 0 -2 0 0 0 1 0 ]
[ 0 0 0 0 0 0 0 1 0 0 0 -2 0 0 0 1 ]
[ 0 0 0 0 0 0 0 0 1 0 0 0 -2 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 1 0 0 0 -2 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 1 0 0 0 -2 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 -2 ]
```

4x4 Grid ($\Delta x = 0.15$ and $\Delta y = 0.25$)

DX -

```
[ 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -3.3333 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 3.3333 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -3.3333 ]
```

DX2 -

```
[ -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 44.4444 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 -88.8889 44.4444 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 -88.8889 44.4444 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 -88.8889 44.4444 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 -88.8889 44.4444 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -88.8889 44.4444 ]
```

DY -

```
[ 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 ]
[ -2 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 ]
[ 0 0 -2 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 ]
[ 0 0 0 -2 0 0 0 0 0 0 0 2 0 0 0 0 0 0 ]
[ 0 0 0 0 -2 0 0 0 0 0 0 0 2 0 0 0 0 0 ]
[ 0 0 0 0 0 -2 0 0 0 0 0 0 0 2 0 0 0 0 ]
[ 0 0 0 0 0 0 -2 0 0 0 0 0 0 0 2 0 0 0 ]
[ 0 0 0 0 0 0 0 -2 0 0 0 0 0 0 0 2 0 0 ]
[ 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 0 0 2 0 ]
[ 0 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 0 0 2 ]
[ 0 0 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 0 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -2 ]
```

DY2 -

```
[ -32 0 0 0 16 0 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 -32 0 0 0 16 0 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 -32 0 0 0 16 0 0 0 0 0 0 0 0 0 0 ]
[ 0 0 0 -32 0 0 0 16 0 0 0 0 0 0 0 0 0 ]
[ 16 0 0 0 -32 0 0 0 16 0 0 0 0 0 0 0 0 ]
[ 0 16 0 0 0 -32 0 0 0 16 0 0 0 0 0 0 0 ]
[ 0 0 16 0 0 0 -32 0 0 0 16 0 0 0 0 0 0 ]
[ 0 0 0 16 0 0 0 -32 0 0 0 16 0 0 0 0 0 ]
[ 0 0 0 0 16 0 0 0 -32 0 0 0 16 0 0 0 0 ]
[ 0 0 0 0 0 16 0 0 0 -32 0 0 0 16 0 0 0 ]
[ 0 0 0 0 0 0 16 0 0 0 -32 0 0 0 16 0 0 ]
[ 0 0 0 0 0 0 0 16 0 0 0 -32 0 0 0 16 0 ]
[ 0 0 0 0 0 0 0 0 16 0 0 0 -32 0 0 0 16 ]
[ 0 0 0 0 0 0 0 0 0 16 0 0 0 -32 0 0 16 ]
[ 0 0 0 0 0 0 0 0 0 0 16 0 0 0 -32 0 16 ]
[ 0 0 0 0 0 0 0 0 0 0 0 16 0 0 0 -32 16 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 16 0 0 0 -32 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 16 0 0 0 -32 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 16 0 0 -32 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 16 0 -32 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 16 -32 ]
[ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 16 -32 ]
```