



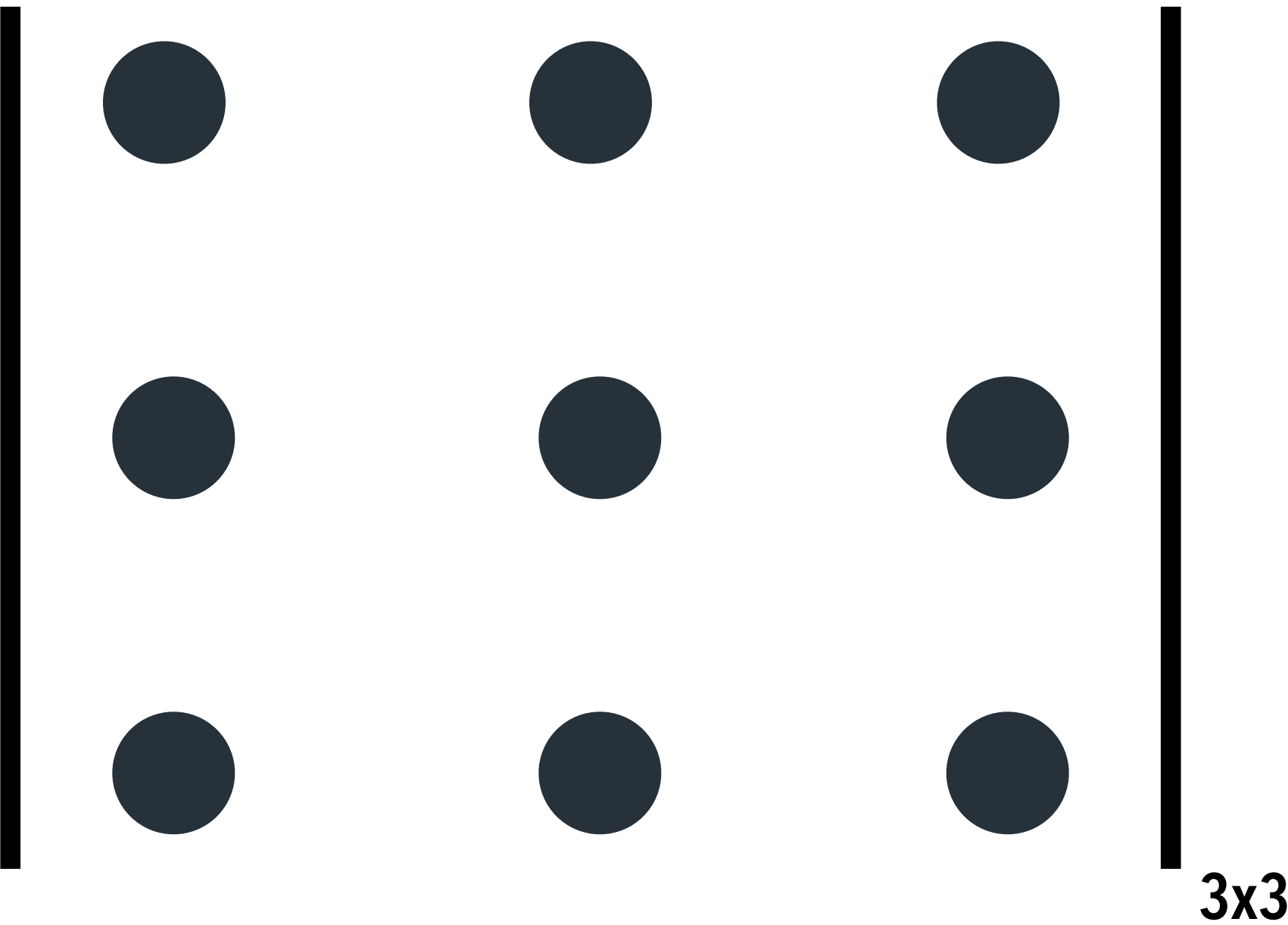
transform() and setTransform()



WHAT WE LEARNT

- `Scale()`
- `Rotate()`
- `Translate()`

TRANSFORMATION MATRIX

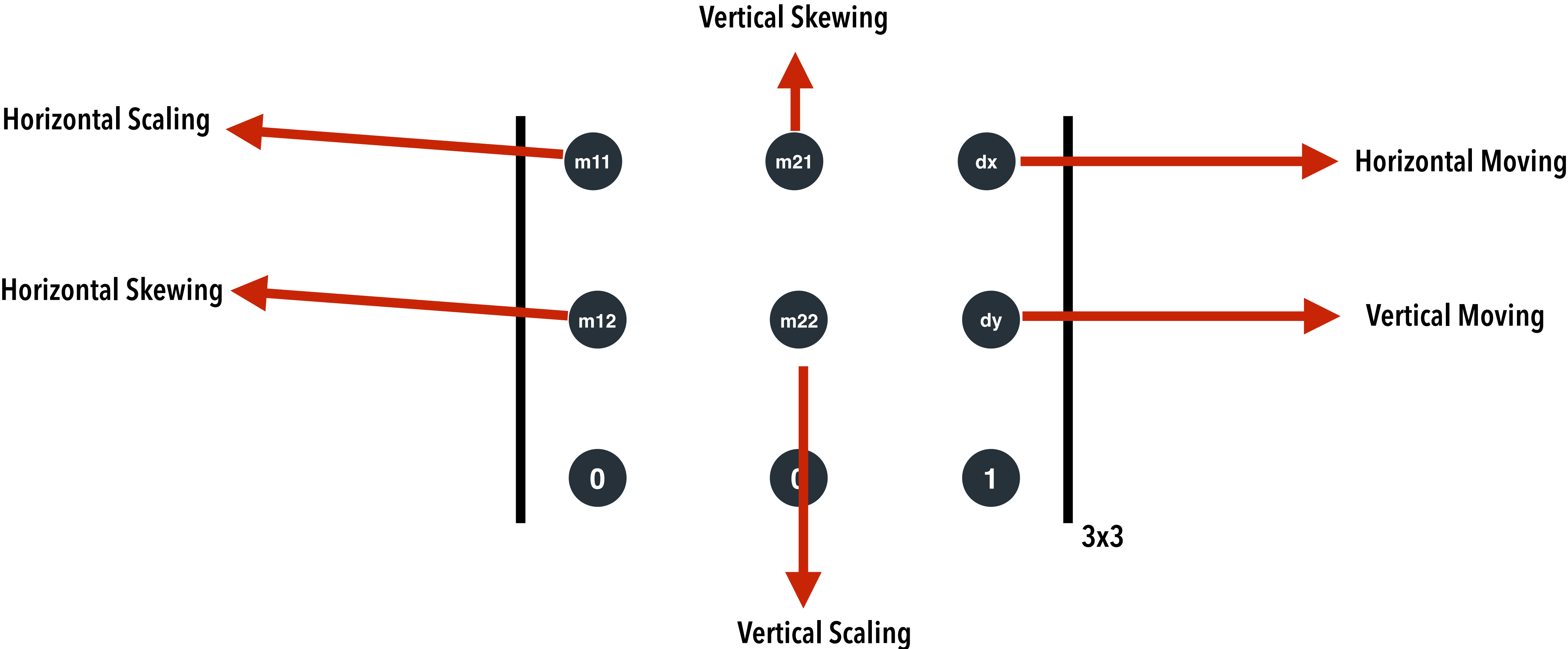


TRANSFORMATION MATRIX

1	0	1
0	1	0
0	0	1

3x3

TRANSFORMATION MATRIX



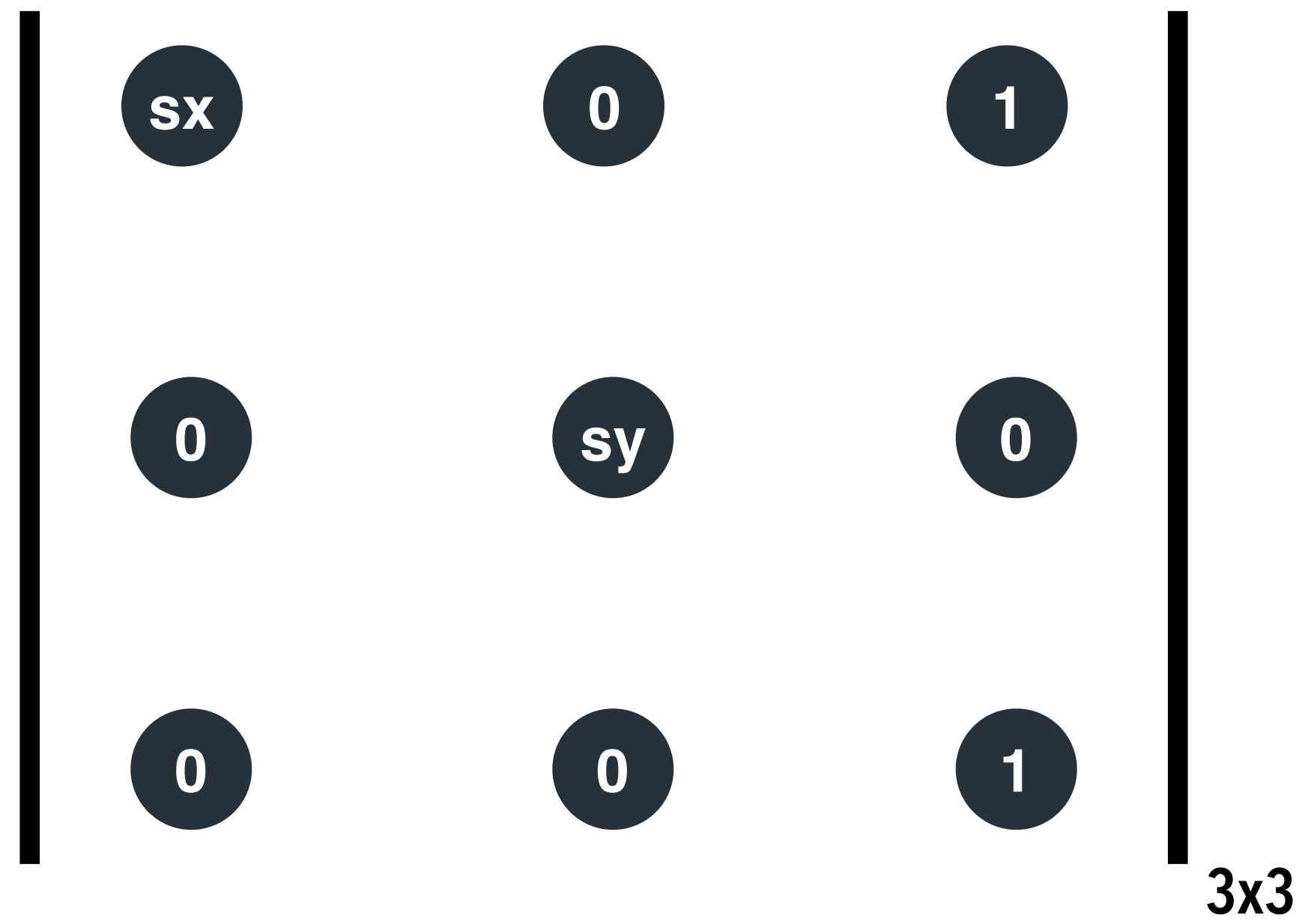
INITIAL STATE

	1	0	1	
	0	1	0	
	0	0	1	
				3x3

scale(sx, sy)

	1	0	1	
	0	1	0	
	0	0	1	
				3x3

scale(sx, sy)



translate(x, y)

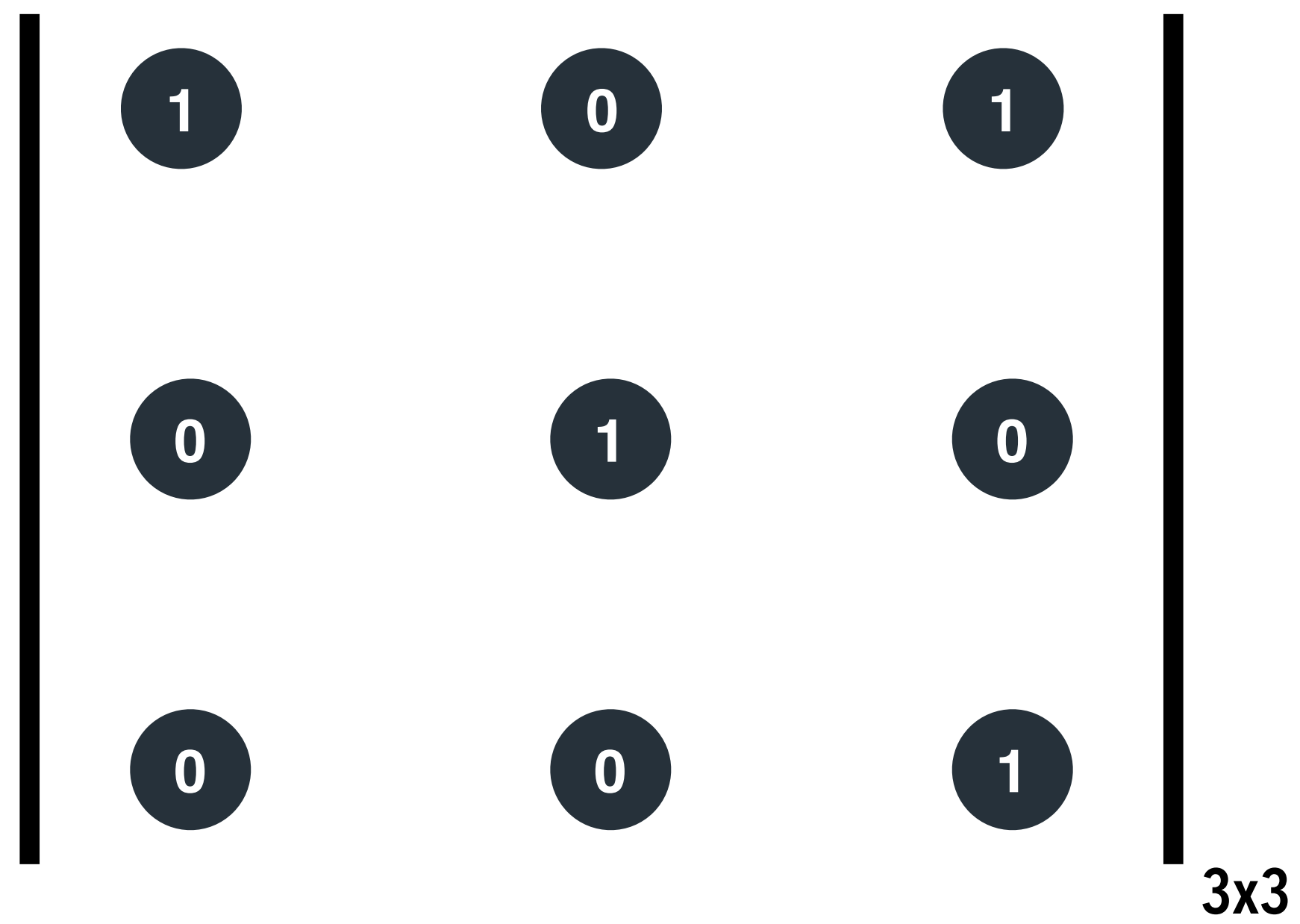
1	0	1
0	1	0
0	0	1

3x3

translate(x, y)

	1	0	x
	0	1	y
	0	0	1
	3x3		

rotate(α)



rotate(α)

	$\cos(\alpha)$	$-\sin(\alpha)$	1
	$\sin(\alpha)$	$-\cos(\alpha)$	0
	0	0	1

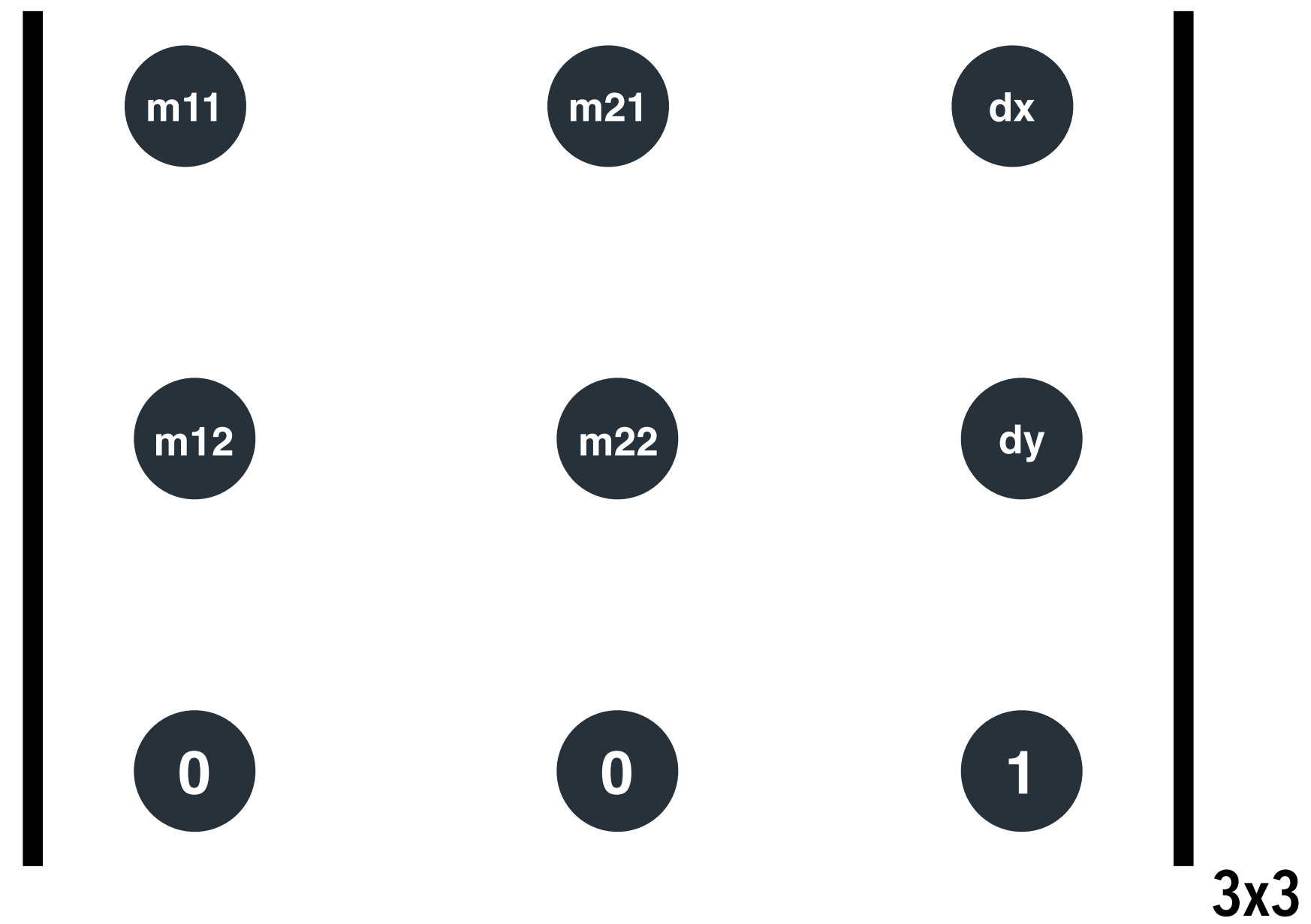
3x3

TRANSFORMATION MATRIX

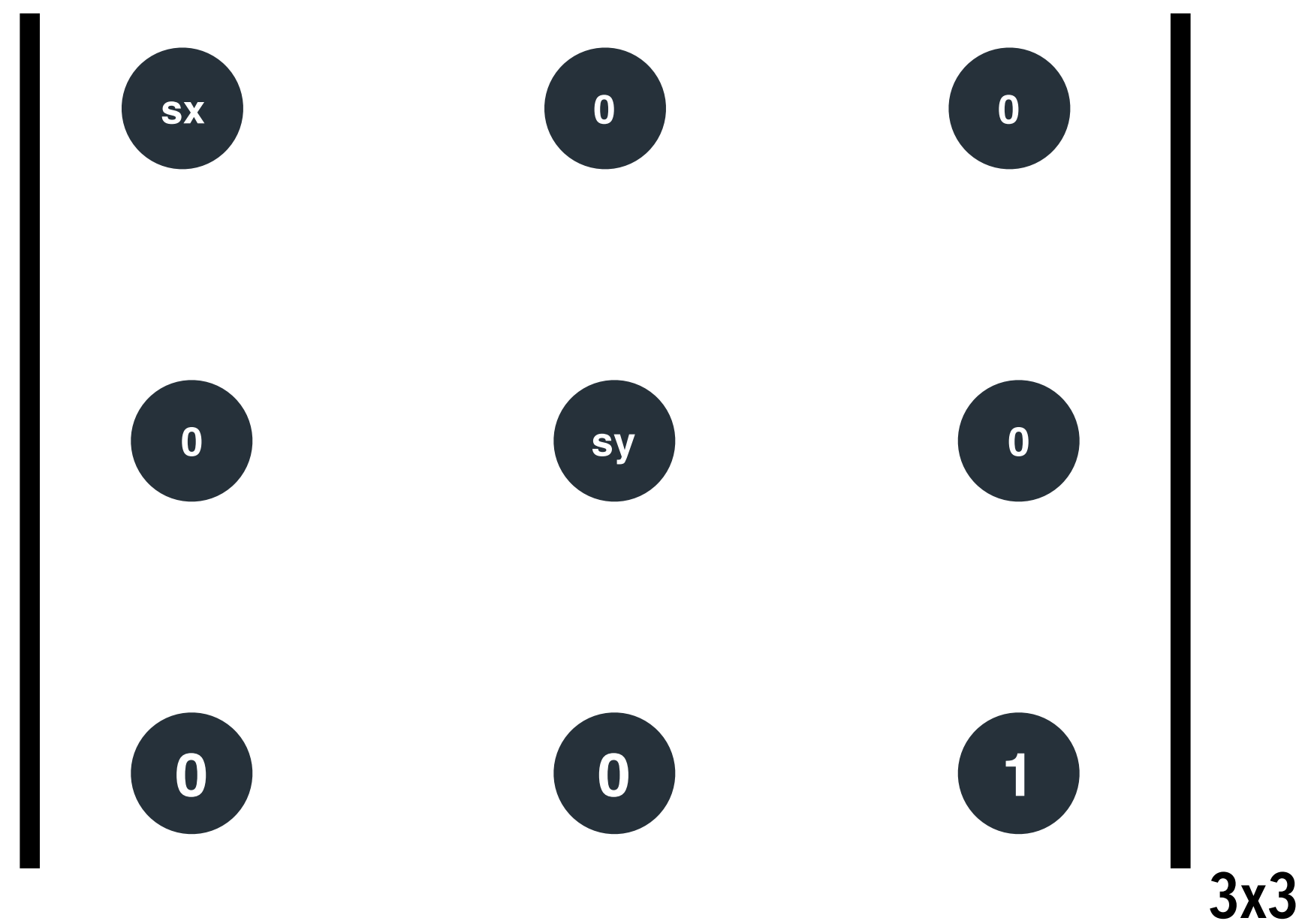
m11	m21	dx
m12	m22	dy
0	0	1

3x3

transform(m11,m12, m21, m22, dx, dy)



transform(*sx*, 0, 0, *sy*, 0, 0)



scale(*sx*, *sy*)

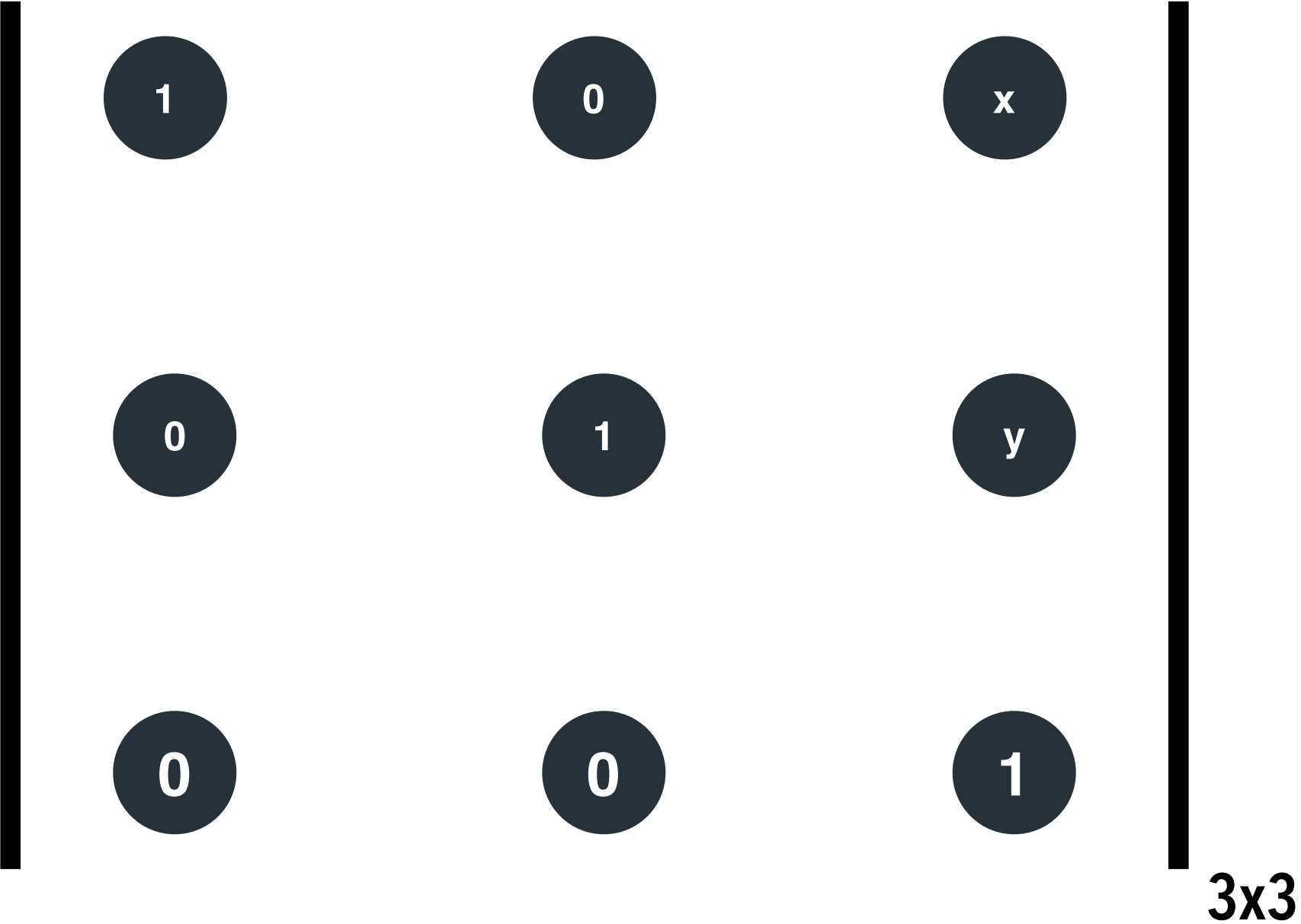
transform(cos α , sin α , -sin α , -cos α , 0, 0)

$$\begin{vmatrix} \cos(\alpha) & -\sin(\alpha) & 1 \\ \sin(\alpha) & -\cos(\alpha) & 0 \\ 0 & 0 & 1 \end{vmatrix}$$

3x3

rotate(α)

transform(1,0, 0, 1, x, y)



translate(x,y)

transform(1,x,y, 1,0, 0)

$$\begin{vmatrix} 1 & y & 0 \\ x & 1 & 0 \\ 0 & 0 & 1 \end{vmatrix}_{3 \times 3}$$

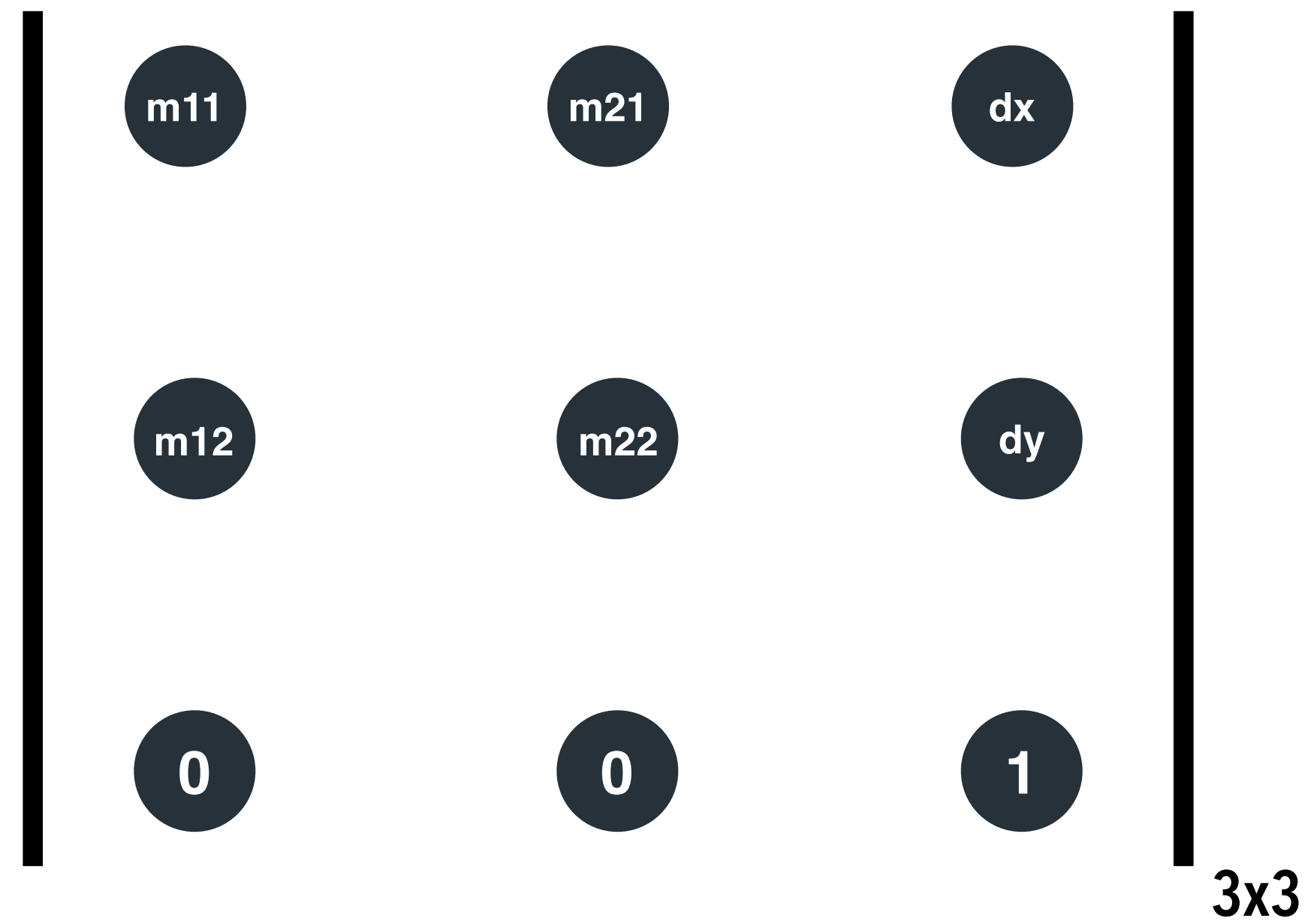
skew(x,y)

TRANSFORMATION MATRIX

1	0	1
0	1	0
0	0	1

3x3

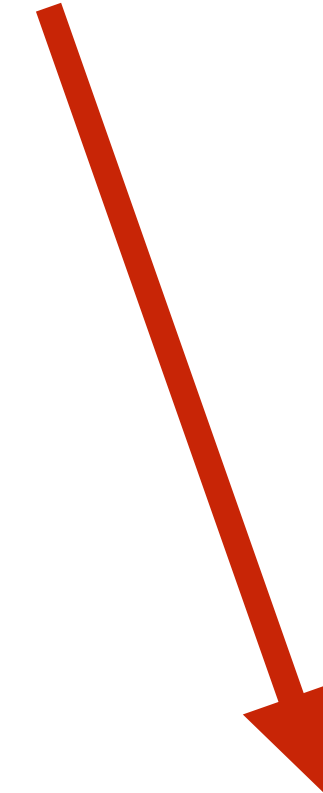
setTransform(m11,m12, m21, m22, dx, dy)



transform() vs setTransform()

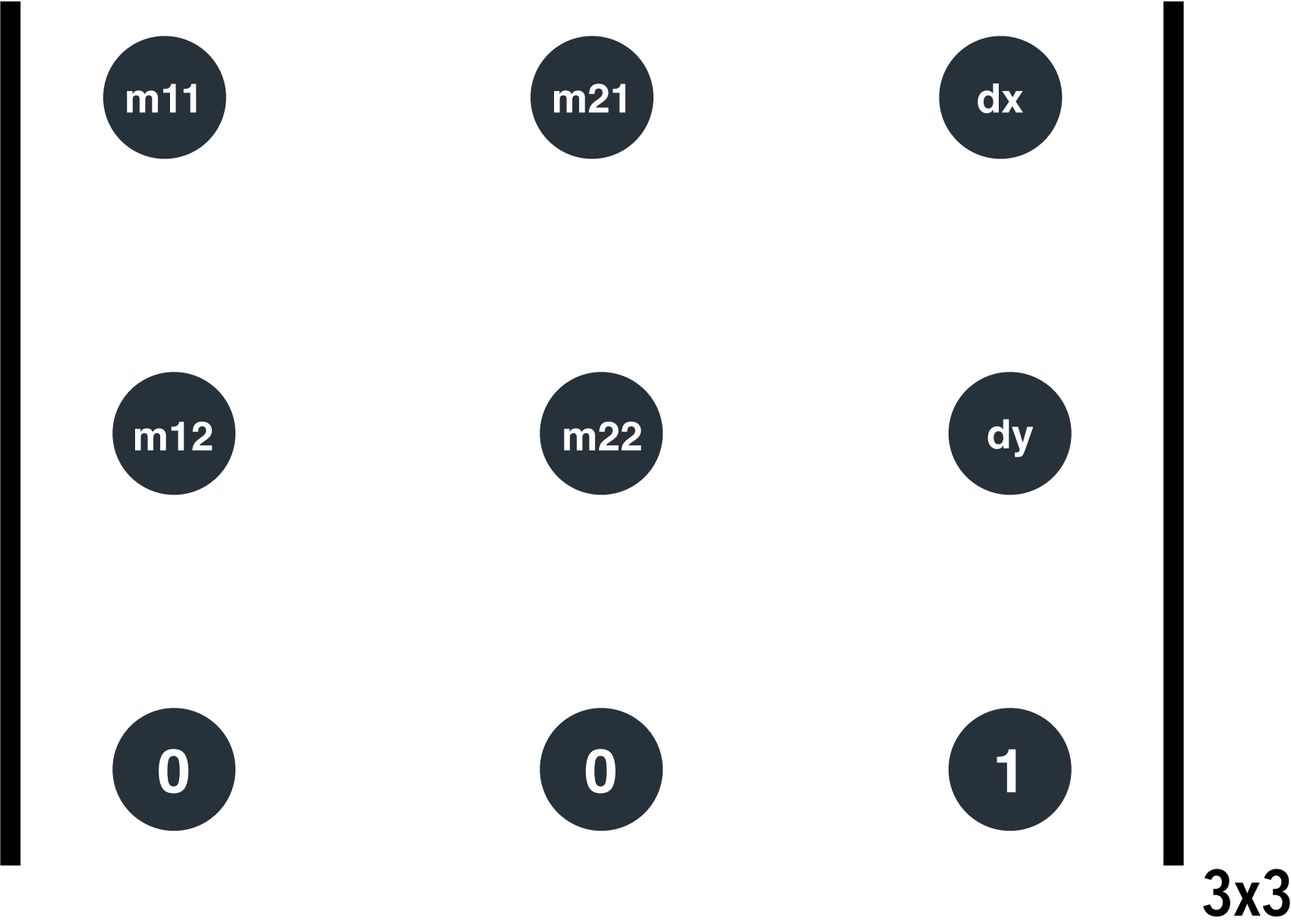


Continues from transformed context

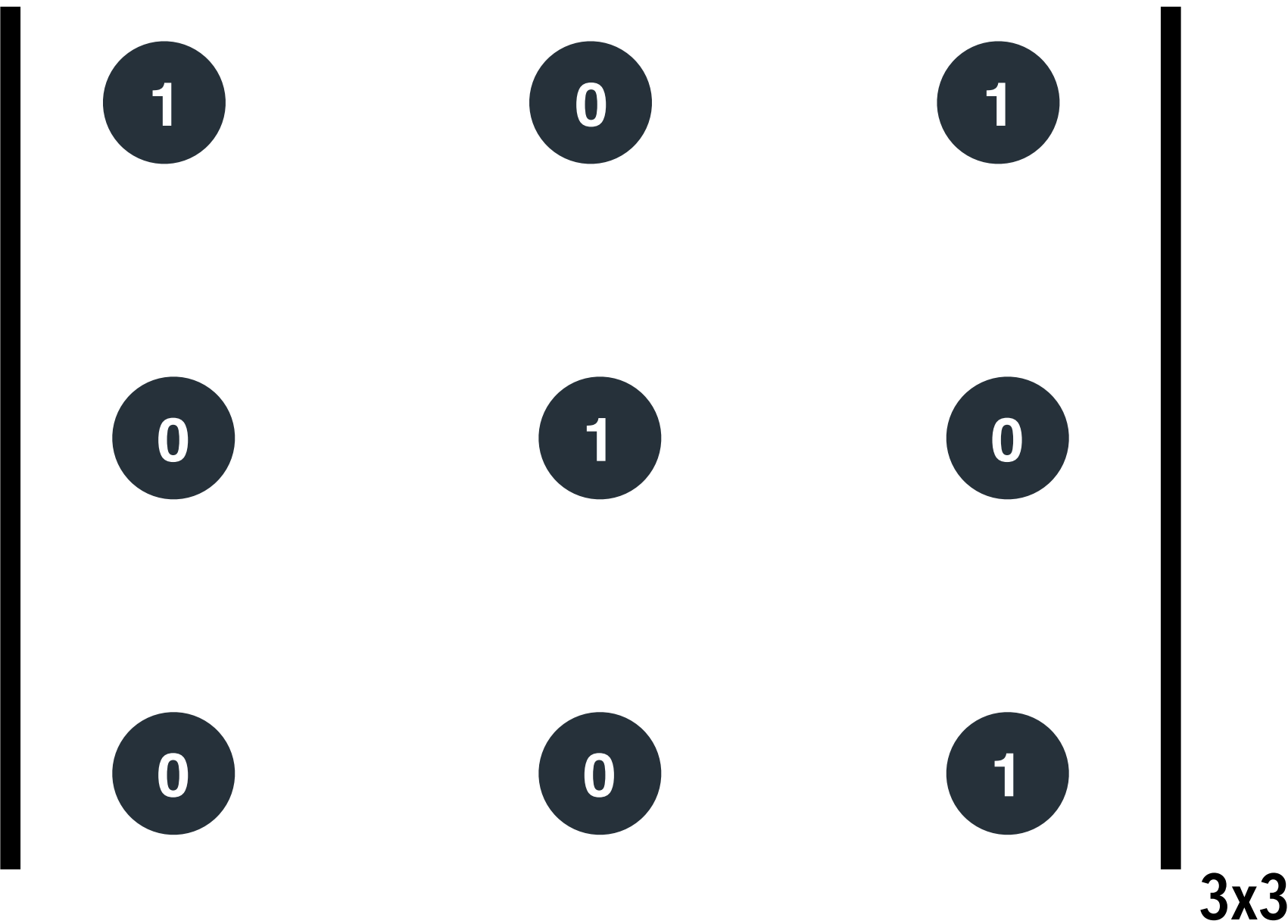


Continues from initial context

resetTransform()



resetTransform()



1	0	1
0	1	0
0	0	1

3x3

setTransform(1,0,0,1,0,0)