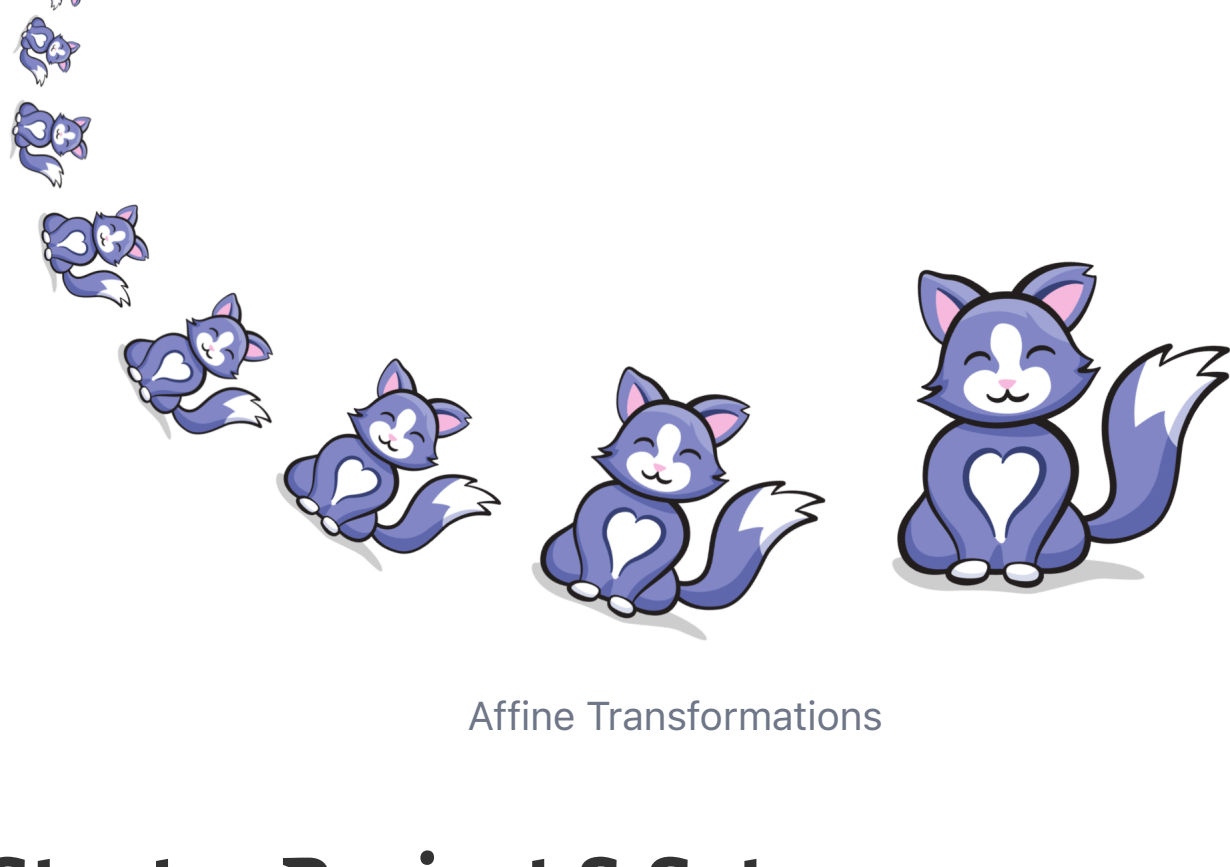


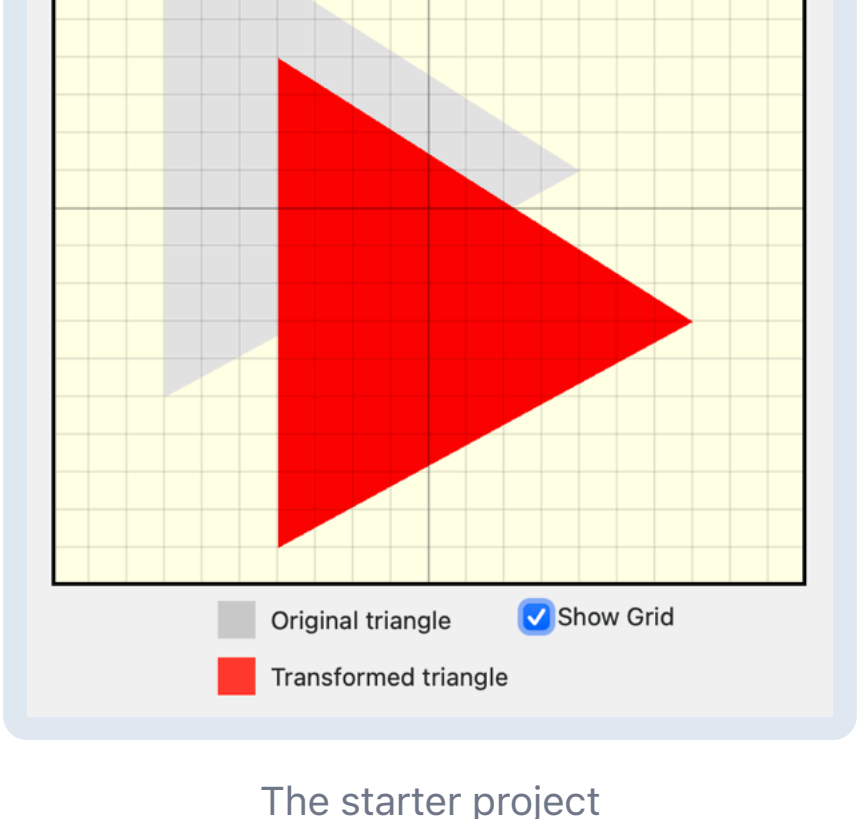
5 3D Transformations

Transformations



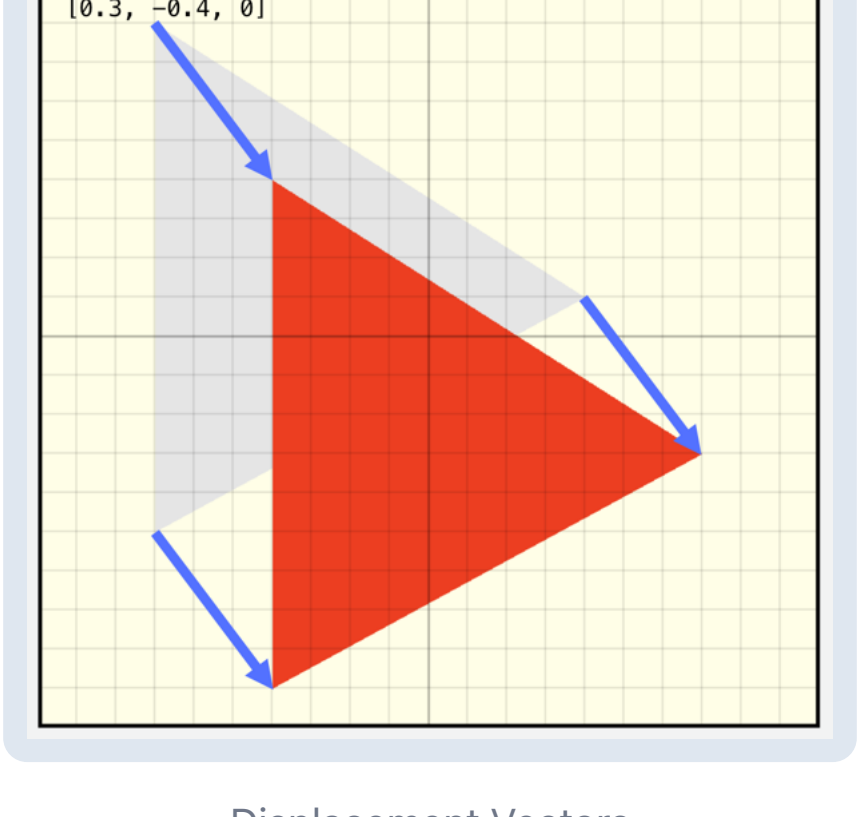
Affine Transformations

The Starter Project & Setup



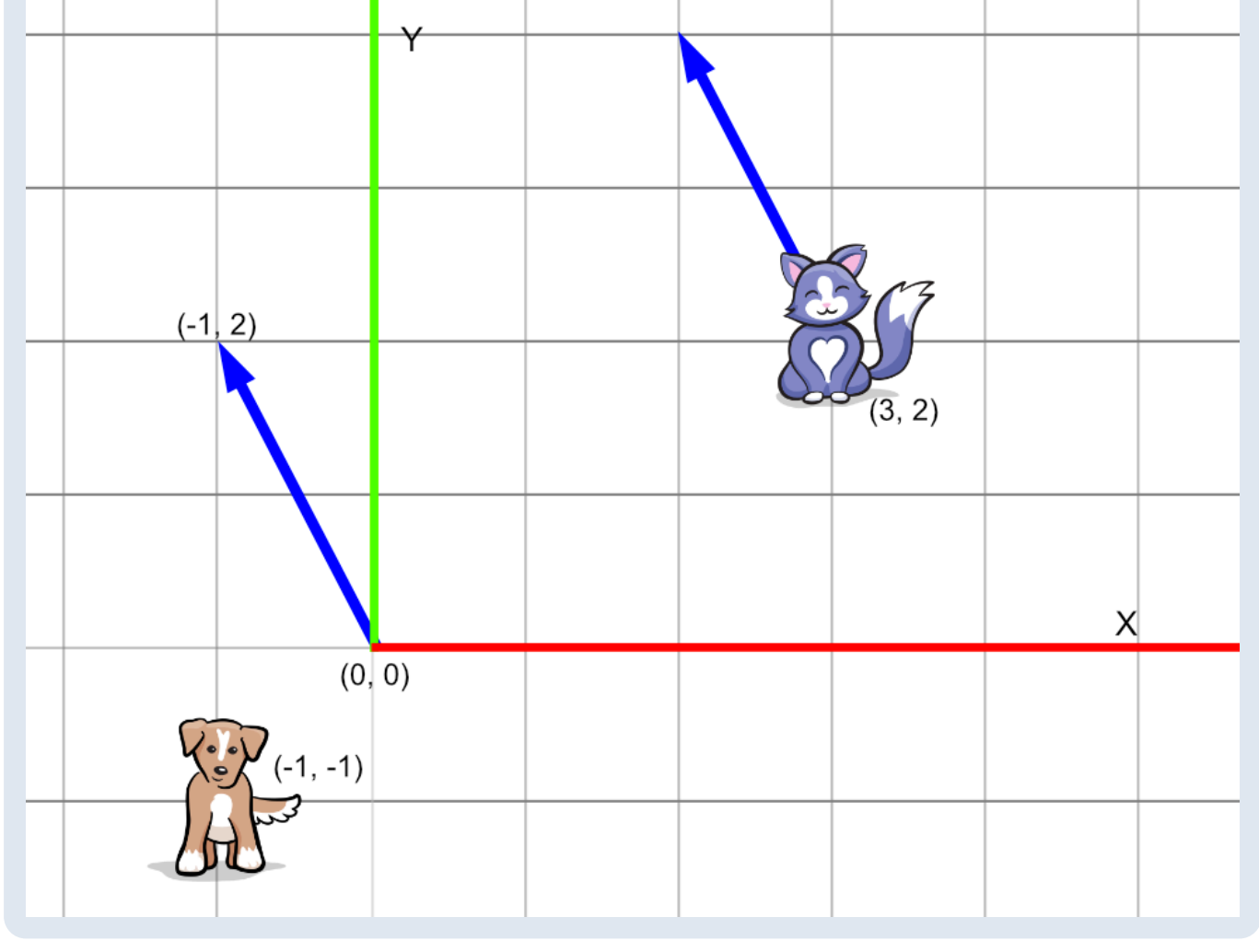
The starter project

Translation



Displacement Vectors

Vectors & Matrices



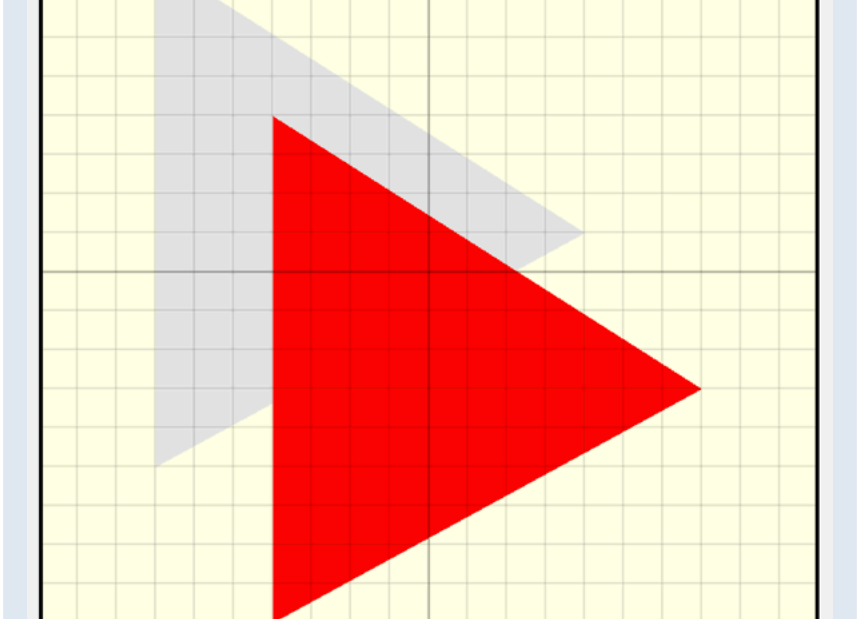
Vectors

1	0	0	0
0	1	0	0
0	0	1	0
0	0	0	1

An identity matrix

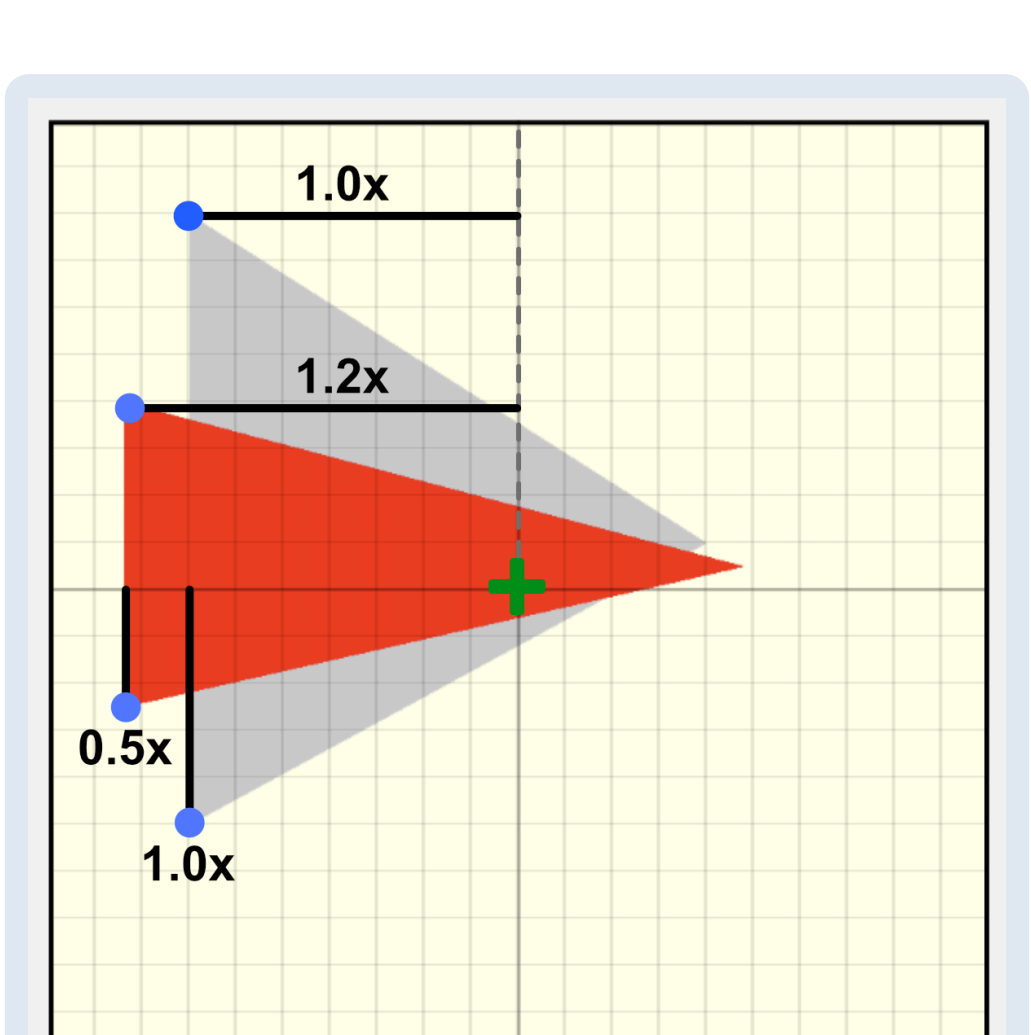
The Magic of Matrices

Creating a Matrix

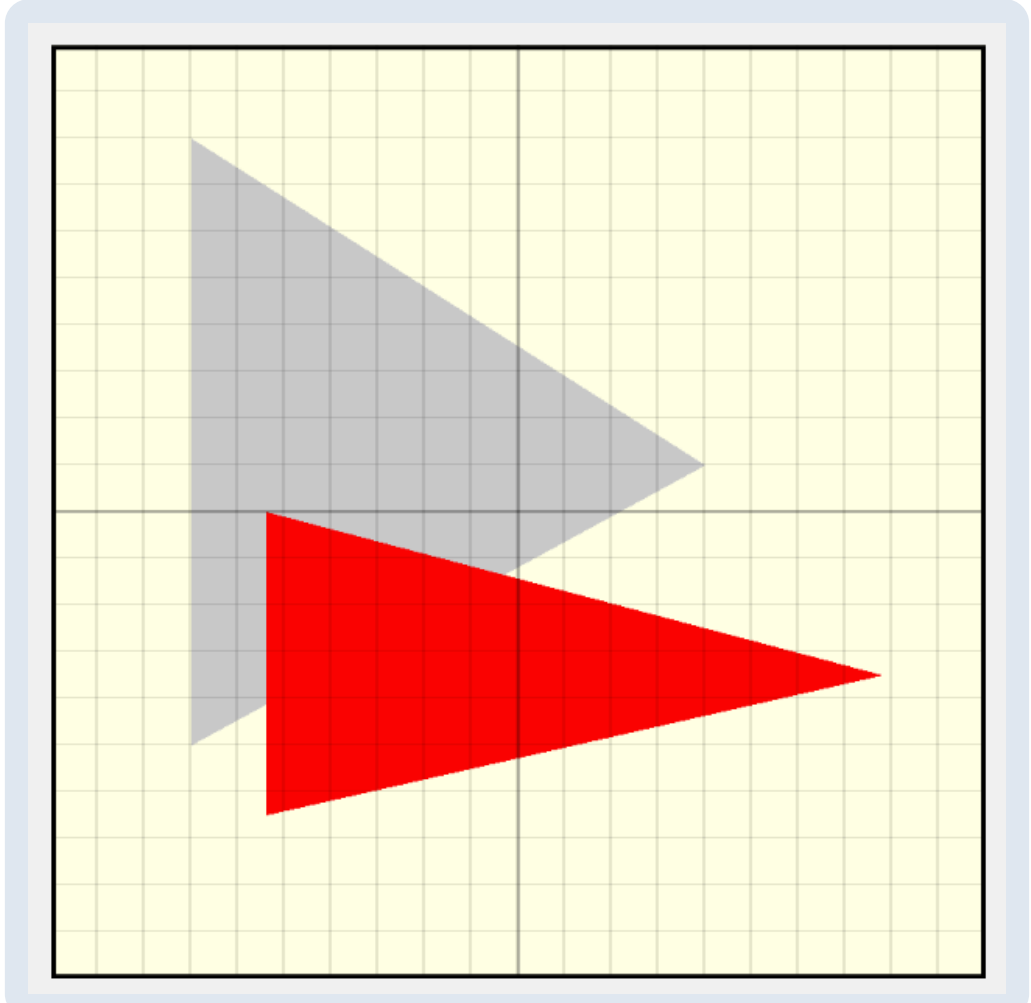


Translation by adding a matrix column to the position

Scaling

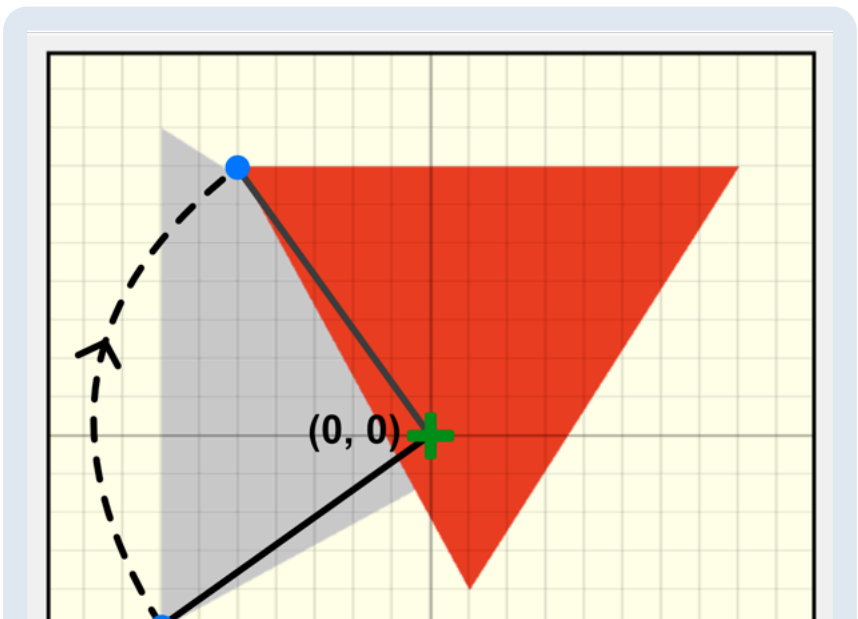


Scaling with a matrix

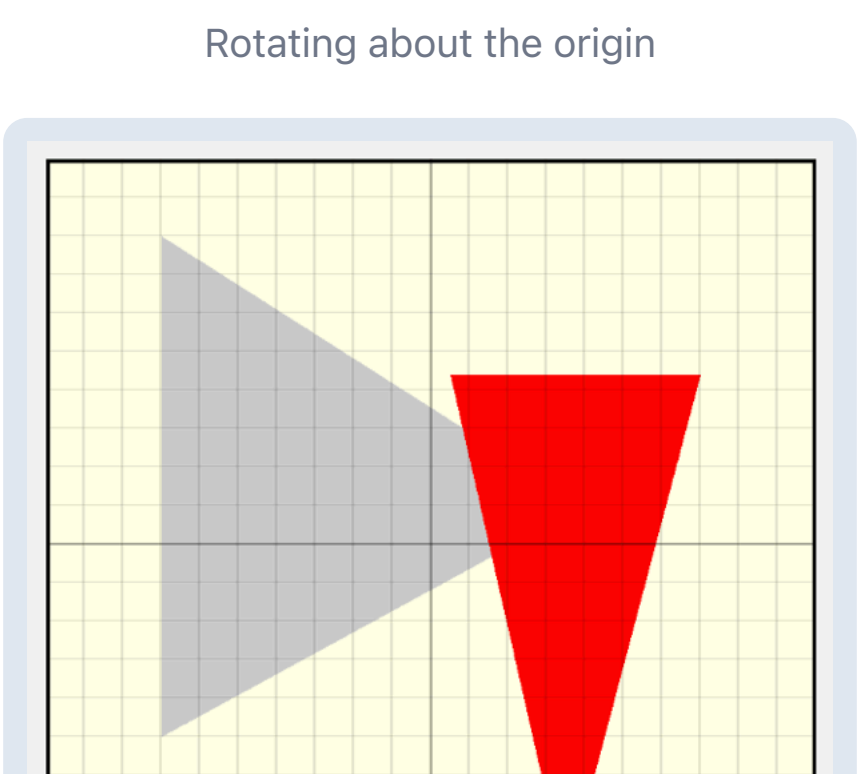


A translated and scaled triangle

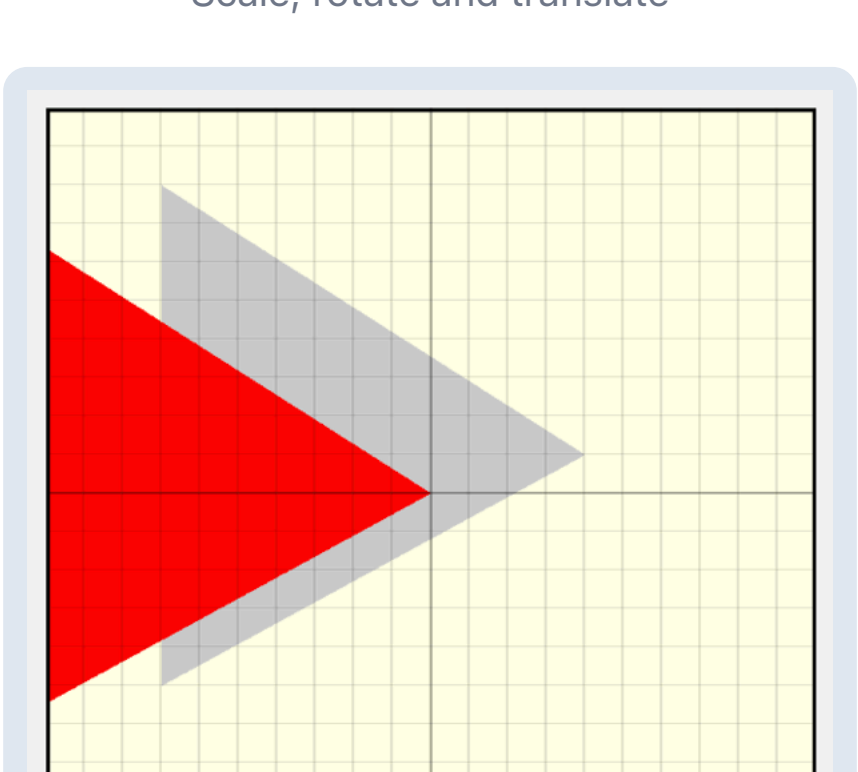
Rotation



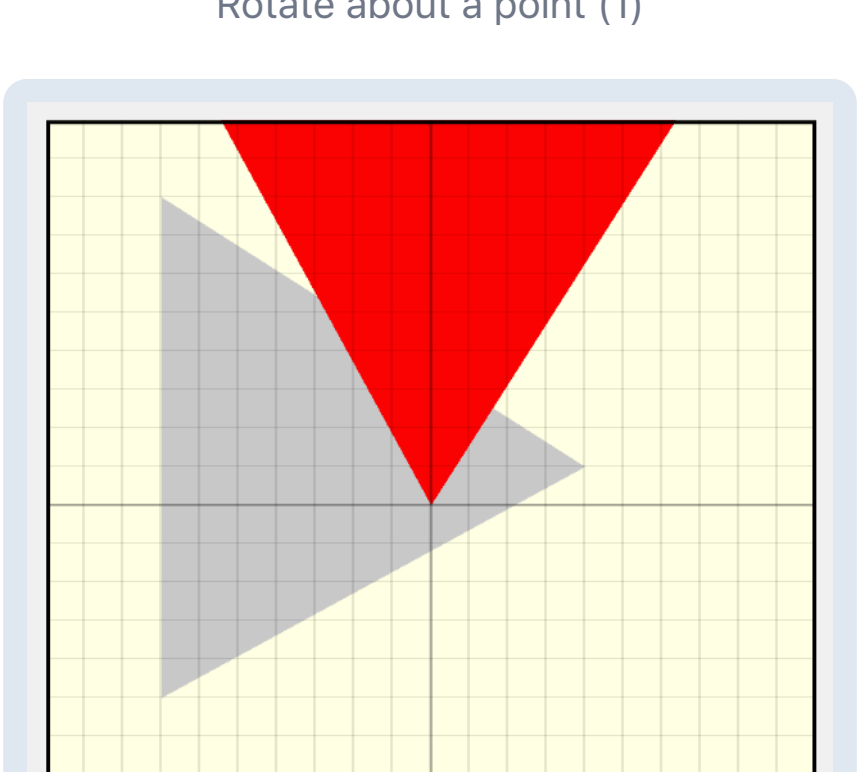
Rotating about the origin



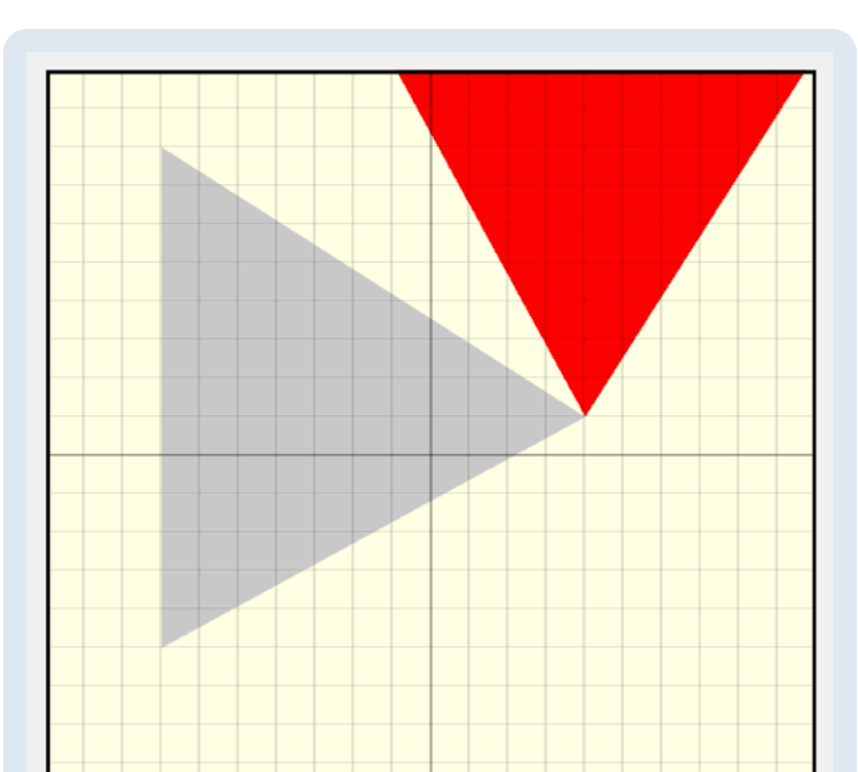
Scale, rotate and translate



Rotate about a point (1)



Rotate about a point (2)



Rotate about a point (3)