

Transform triangle $A(1, 2) B(4, 0) C(4, 2)$

with the matrix $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$.

Enter the matrix in Main.

Open a Geometry window from Main,
add axes and grid.

Select the **line segment** tool and draw
the three sides of the triangle.

Use the **select** tool to select each of the
three sides of the triangle.

Drag the shape from the geometry
window into the cursor box in Main,
and then release.

The vertices are arranged in a matrix.

Math1 Line $\sqrt{\square}$ π \rightarrow
 Math2 \square e^{\square} \ln i ∞
 Math3 \square $\frac{d}{d\square}$ $\frac{d^2}{d\square^2}$ $\int \square$ $\lim_{\square \rightarrow \square}$
 Trig \square \square \square $\Sigma \square$ $\int \square$
 Var \square \square \square \square \square
 abc sin cos tan θ t
 \leftarrow \rightarrow \square \square ans EXE
 Alg Standard Real Rad \square

File Edit View Draw \square
 \square \rightarrow \square \square \square \square \square \square \square \square
 $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$
 -4 2 4
 -2
 \square

File Edit View Draw \square
 \square \rightarrow \square \square \square \square \square \square \square \square
 $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$
 -4 2 4
 -2
 \square

File Edit View Draw \square
 \square \rightarrow \square \square \square \square \square \square \square \square
 $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 4 & 4 \\ 2 & 0 & 2 \end{bmatrix}$
 -4 2 4
 -2
 d: (-1, 1) \square

Tap on the matrix result to select it.

Drag the selected matrix back into the middle of the Geometry window and release.

The image is drawn - in this case a reflection in the y-axis.

Note that in Geometry alone, matrix transformations can be applied to a selected object using the **Draw, Construct, General Transform** tool.

The screenshot shows the 'Edit Action Interactive' window. The top toolbar includes icons for undo, redo, and various mathematical functions. The main display area shows two matrix results: $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 4 & 4 \\ 2 & 0 & 2 \end{bmatrix}$ and $\begin{bmatrix} -1 & -4 & -4 \\ 2 & 0 & 2 \end{bmatrix}$. The bottom panel shows a coordinate grid with a triangle ABC. The x-axis ranges from -4 to 4, and the y-axis from -2 to 2. The triangle has vertices at approximately (-1, 1), (1, 1), and (1, 0).

This screenshot is similar to the previous one, but the second matrix $\begin{bmatrix} -1 & -4 & -4 \\ 2 & 0 & 2 \end{bmatrix}$ is highlighted in blue, indicating it is selected. The triangle ABC is still visible in the bottom panel.

The screenshot shows the 'File Edit View Draw' window. The matrix results are still present. The bottom panel now shows two coordinate grids. The left grid shows the original triangle ABC. The right grid shows the transformed triangle, which is a reflection of the original across the y-axis, with vertices at approximately (1, 1), (-1, 1), and (-1, 0).

This screenshot shows the 'File Edit View Draw' window with the 'Draw' menu open. The menu items include: Basic Object, Special Polygon, Function, Text, Attached Angle, Measurement, Slider, Expression, Perp. Bisector, Perpendicular, Midpoint, Intersection, Angle Bisector, Parallel, Tangent to Curve, Reflection, Translation, Rotation, Dilatation, and General Transform. The 'General Transform' option is highlighted in blue.