

The City School
North Nazimabad Boys Campus

Subject:

Class:



Reflection

Reflection in the x -axis	$1 \ 0$ $0 \ -1$
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Reflection in the y -axis	$-1 \ 0$ $0 \ 1$
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Reflection in the line $y = x$	$0 \ 1$ $1 \ 0$
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Reflection in the line $y = -x$	$0 \ -1$ $-1 \ 0$
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Rotation

Rotation about the origin through 90 anti-clockwise	$\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$
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Rotation about the origin through 180 anti-clockwise	$\begin{pmatrix} -1 & 0 \\ 0 & -1 \end{pmatrix}$
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Rotation about the origin through 90 clockwise	$\begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$
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Enlargement

Enlargement, centre of enlargement	k
$(0, 0)$, scale factor k	0

Stretch

Stretch one-way, to the x-axis, y-axis	$k \ 0$
invariant line, scale factor k	$0 \ 1$

Stretch one-way, to the y-axis, x-axis	$1 \ 0$
invariant line, scale factor k	$0 \ k$

Shear

Shear in x-axis direction, x-axis invariant line, scale factor k	$\begin{pmatrix} 1 & k \\ 0 & 1 \end{pmatrix}$
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Shear in y-axis direction, y-axis invariant line, scale factor k	$\begin{pmatrix} 1 & 0 \\ k & 1 \end{pmatrix}$
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