LU-factorization
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Transformations on the coordinate plane
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RGB-colors
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Application in computer graphics

Scaling by a horizontal factor s and a vertical factor t
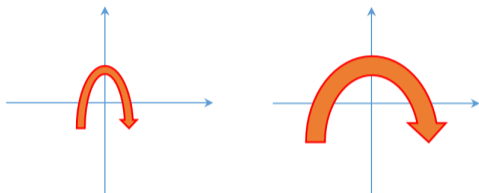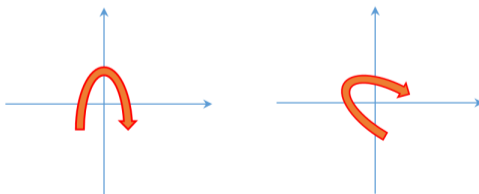
$$\begin{pmatrix} s & 0 & 0 \\ 0 & t & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

Counterclockwise rotation by an angle θ

$$\begin{pmatrix} \cos\theta & -\sin\theta & 0 \\ \sin\theta & \cos\theta & 0 \\ 0 & 0 & 1 \end{pmatrix}$$