SCHOOL OF MATHEMATICS AND PHYSICS

Quadratic forms

Consider the conic sections defined by the equations:

1. $9\,x^2 - 24\,xy + 16\,y^2 - 40\,x - 30\,y - 32 = 0$
2. $12\,x^2 + 12\,xy + 7\,y^2 - 4\,x + 6\,y - 1 = 0$
3. $4\,x^2 - 42\,xy + 11\,y^2 + 56\,x + -58\,y + 95 = 0$

Rotate and translate the coordinate axes, if necessary, to put the conic in standard position. Name the conic and give its equation in the final coordinate system.

Use the online simulation to visualise the rotation and translation of the coordinate axes. Click on the link below or type the URL into your browser's address bar.

https://teaching.smp.uq.edu.au/scims/Linear_algebra/Quadratic_forms.html