1. *(25 points) Show that If A and B are row equivalent matrices and A is invertible then B is invertible.*

2. (15 points) State composition of linear transformation and composition of correspondent nonlinear neural transformation

3. (25 points) Determine the single matrix that describes a reflection in the x-axis, following by a rotation through $\pi/2$ followed by a dilation of factor 3. Find the image of the point $(1\ 2)^\mathrm{T}$ under this sequence of mappings.

4. (20 points) What is orthogonal transformation? Show its preservation for norm and dot products.

5. (20 points) State composition of affine transformation and composition of correspondent nonlinear neural transformation.