0.1 Kernels and images

The kernel of a linear operator is the set of vectors such that:

$Mv = 0$

The kernel is also called the nullspace.

This can be shown as $\ker(M)$

The image of a linear operator is the set of vectors w such that:

$Mv = w$.

This can be shown as $\Im(M)$

We also know that:

$span(M) = \ker(M) + \Im(M)$