

Math 251: Test 1 Formula Sheet

normal form: $\mathbf{N} \cdot \mathbf{PX} = 0$

general form: $ax + by + cz = d$

vector form: $\mathbf{PX} = s\mathbf{u} + t\mathbf{v}$

parametric form:
$$\begin{cases} x = p_1 + su_1 + tv_1 \\ y = p_2 + su_2 + tv_2 \\ z = p_3 + su_3 + tv_3 \end{cases}$$

projection operator: $\text{proj}_{\mathbf{u}}\mathbf{v} = \frac{\mathbf{u} \cdot \mathbf{v}}{\mathbf{u} \cdot \mathbf{u}} \mathbf{u}$