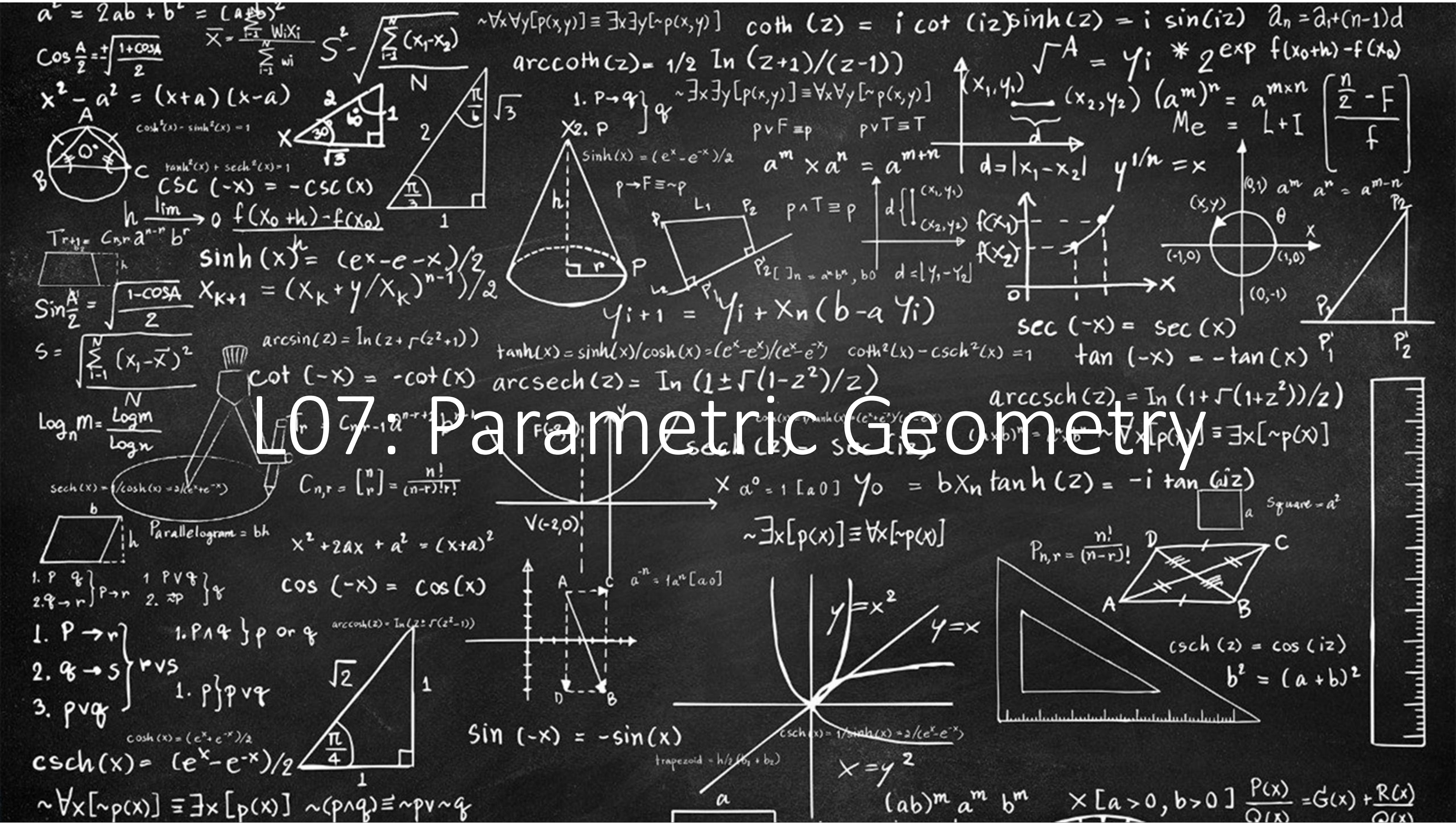
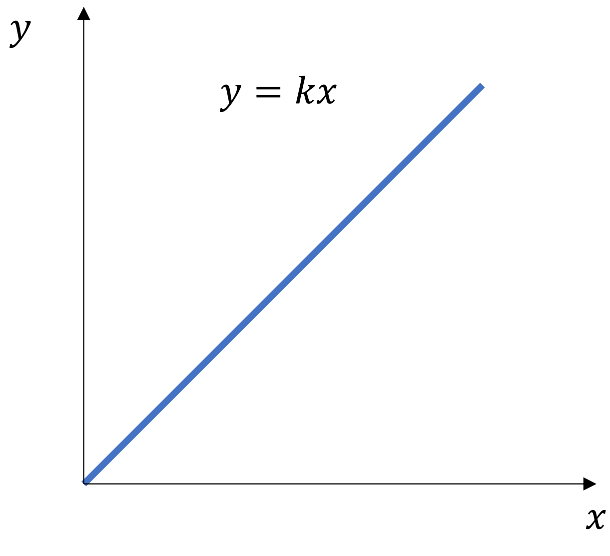
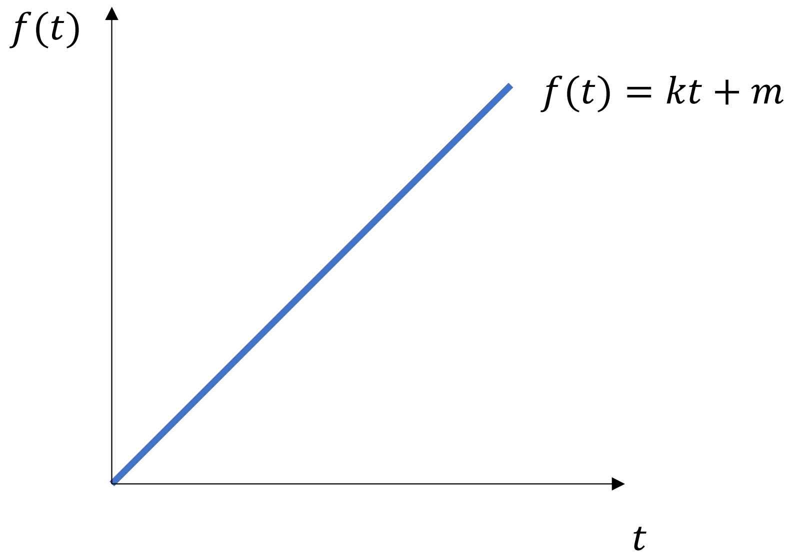
L07: Parametric Geometry

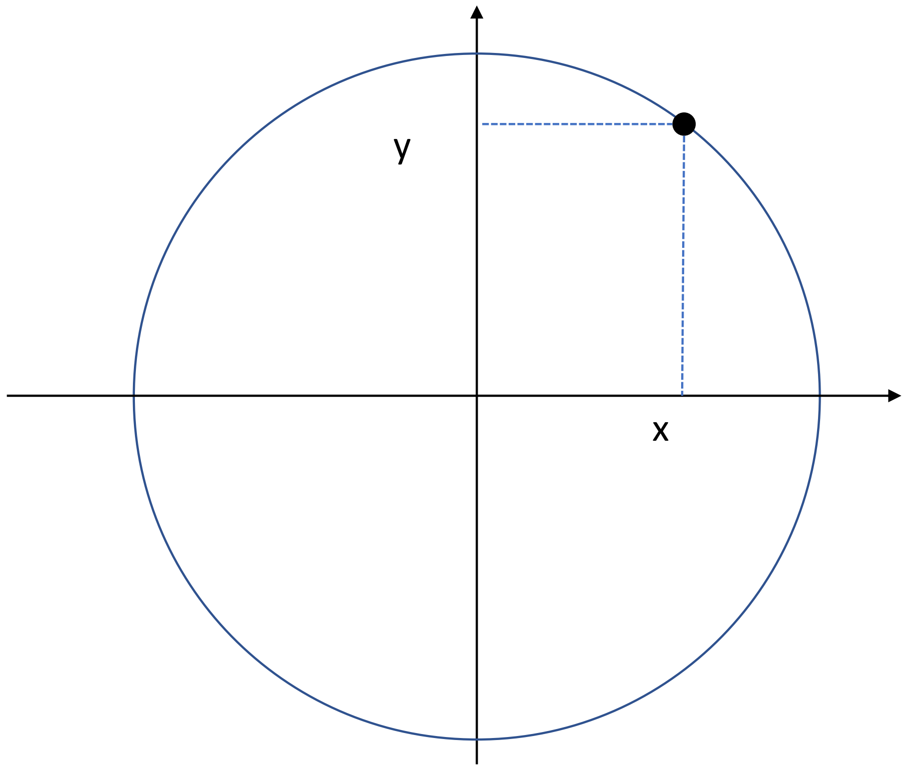


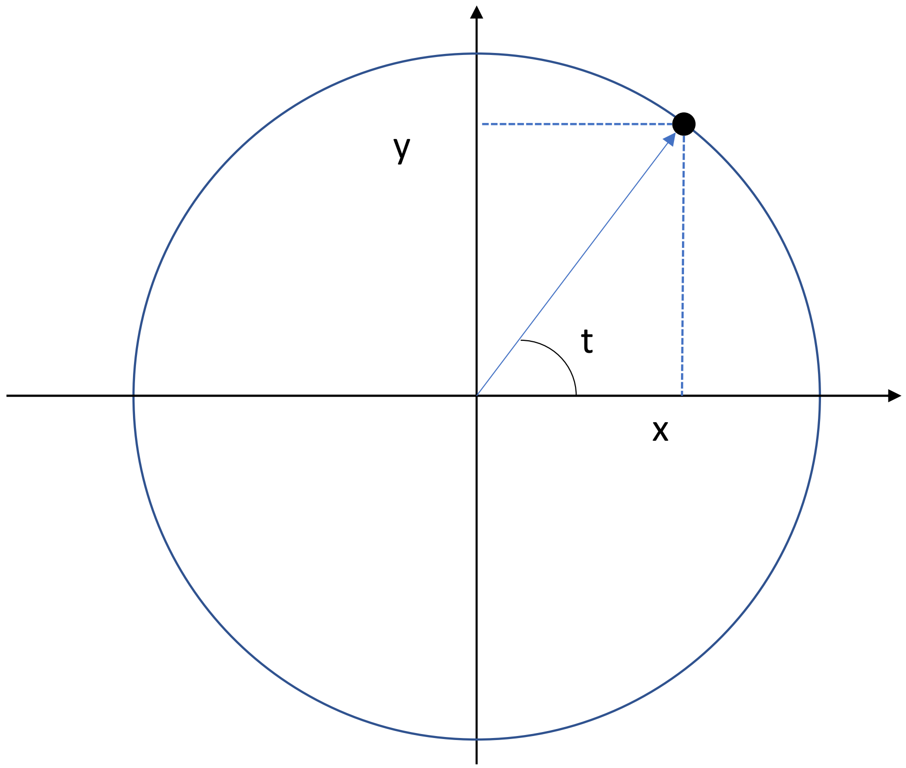




$$kx + y = m$$

$$x = t,$$
$$f(t) = kt + m$$





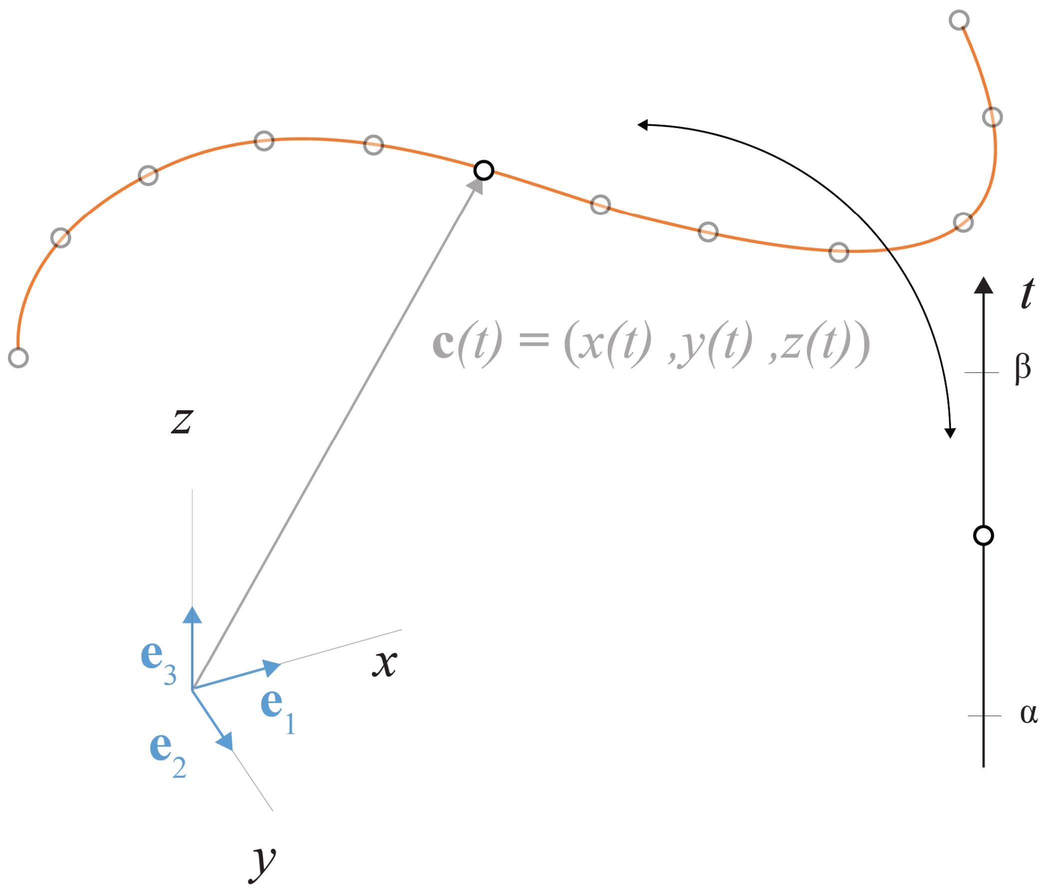
$$x^2 + y^2 = r^2$$

$$x = \pm\sqrt{r^2 + y^2}$$

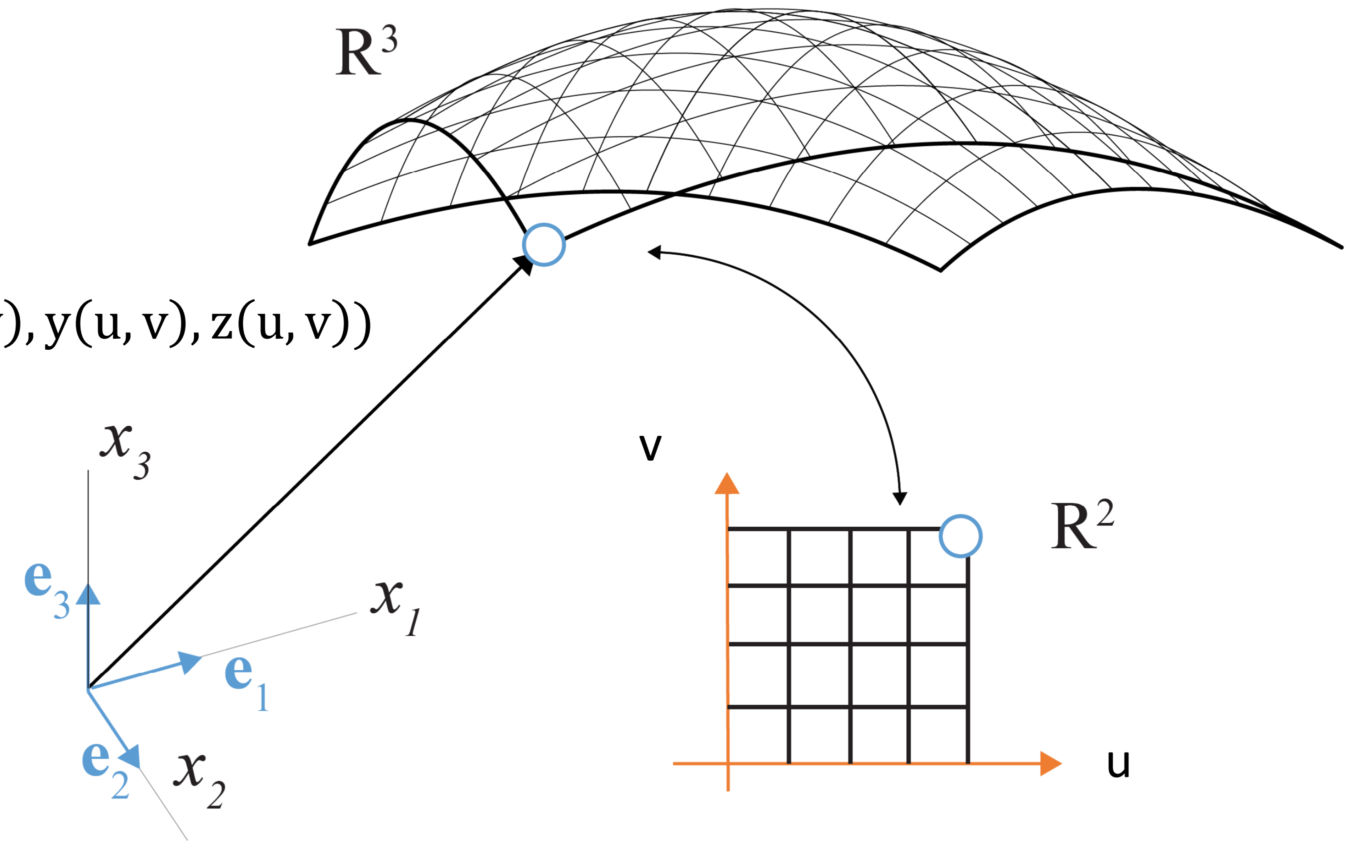
$$y = \pm\sqrt{r^2 + x^2}$$

$$x = r\,cos(t) \quad y = r\,sin(t)$$

$$0 \leq t \leq 2\pi$$



$$\boldsymbol{f}(t) = \mathrm{x(t)}\mathbf{e}_1 + \mathrm{y(t)}\mathbf{e}_2 + \mathrm{z(t)}\mathbf{e}_3$$



$$\boldsymbol{r}(u,v) = \mathrm{x}(\mathrm{u},\mathrm{v})\mathbf{e}_1 + \mathrm{y}(\mathrm{u},\mathrm{v})\mathbf{e}_2 + \mathrm{z}(\mathrm{u},\mathrm{v})\mathbf{e}_3$$