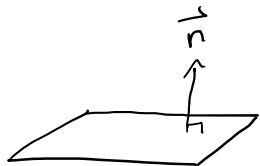


More about Tangent Planes

Recall $\vec{n} = [-z_x, -z_y, 1]$

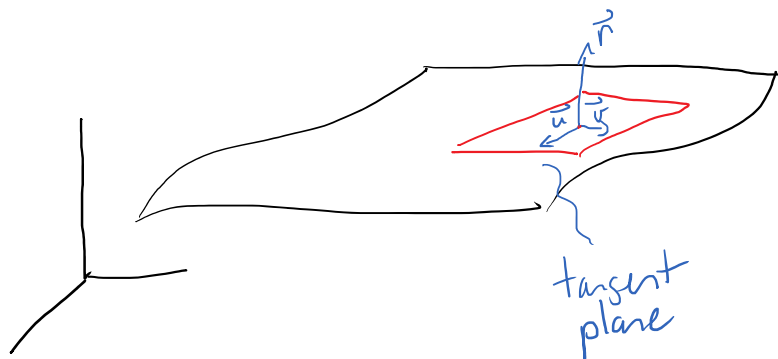
Q: Where is a tangent plane horizontal?



$$\vec{n} = [0, 0, 1]$$

Any point where $z_x = 0$ and $z_y = 0$

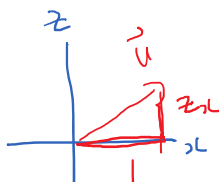
Q: Why does $\vec{n} = [-z_x, -z_y, 1]$?



$$\vec{n} = \vec{u} \times \vec{v}$$

\vec{u}, \vec{v} : 2 direction vectors for tangent plane

\vec{u} = tangent vector in x-direction



$$\vec{u} = [1, 0, z_x]$$

\vec{v} = tangent vector in y-direction

$$\vec{v} = [0, 1, z_y]$$

$$\begin{aligned}\vec{n} &= \vec{u} \times \vec{v} \\ &= [-z_x, -z_y, 1]\end{aligned}$$