

## The Coordinate System II

The coordinate system given by

$$xy = 0$$

is not a real coordinate system; it is created by two intersecting planes. You look at the planes *from above*. This way, the third dimension, i.e. the  $z$ -axis is hidden.

From  $x = 0$  we obtain the  $yz$ -plane and from  $y = 0$  the  $xz$ -plane. Both equations have the "equal to zero" on their right side. If you multiply them they are displayed together, because a product is zero if one of the factors is zero. This means that the two surfaces are *added*.

This way we can add an arbitrary number of surfaces. However, it becomes more and more difficult to compute them.