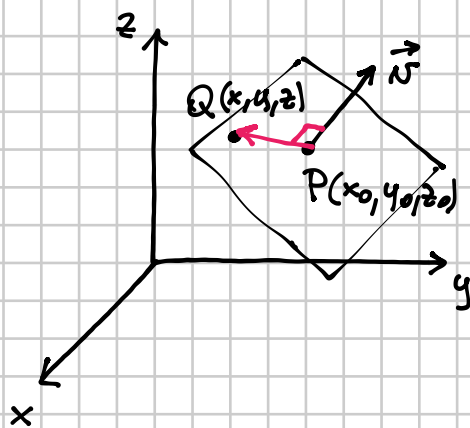


EQUAZIONE DI UN PIANO NELLO SPAZIO



$\vec{n} = (a, b, c)$ VETTORE
PERPENDICOLARE
AL PIANO

$P(x_0, y_0, z_0)$ PUNTO DEL PIANO

$Q(x, y, z)$ è un generico punto
del piano

$$\vec{PQ} \perp \vec{n} \Rightarrow \vec{PQ} \cdot \vec{n} = 0$$

$$\left. \begin{array}{l} \vec{PQ} = (x - x_0, y - y_0, z - z_0) \\ \vec{n} = (a, b, c) \end{array} \right| \Rightarrow \begin{array}{l} a(x - x_0) + b(y - y_0) + c(z - z_0) = 0 \\ ax + by + cz - ax_0 - by_0 - cz_0 = 0 \end{array}$$

$\underbrace{\hspace{10em}}_d$

$ax + by + cz + d = 0$

EQUAZIONE
GENERALE
DEL PIANO

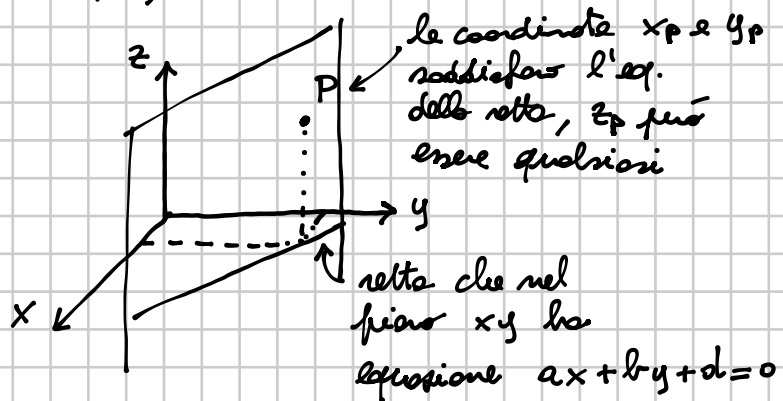
il vettore $\vec{n} = (a, b, c)$ indica la direzione PERPENDICOLARE AL PIANO

CASI PARTICOLARI

1) $d = 0 \Rightarrow$ il piano passa per $O(0, 0, 0)$

2) $c = 0 \Rightarrow ax + by + d = 0$

PIANO \perp PIANO xy
 \parallel ASSE z



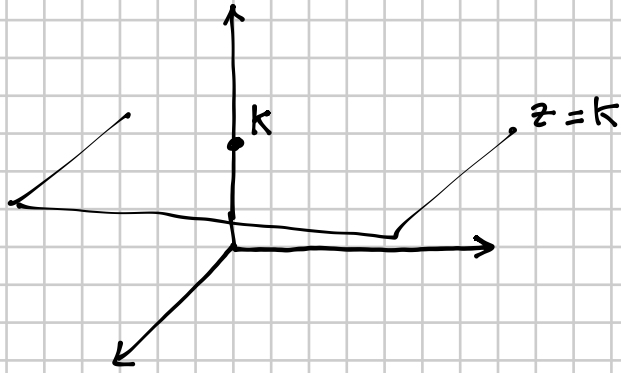
3) $a = 0 \Rightarrow by + cz + d = 0$

PIANO \perp PIANO yz
 \parallel ASSE x

4) $b = 0 \Rightarrow ax + cz + d = 0$

PIANO \perp PIANO xz
 \parallel ASSE y

$$5) a=0 \quad b=0 \Rightarrow cz+d=0 \quad z=k \quad \text{PIANO } \perp \text{ ASSE } z$$



$$6) a=0 \quad c=0 \Rightarrow y=k \quad \text{PIANO } \perp \text{ ASSE } y$$

$$7) b=0 \quad c=0 \Rightarrow x=k \quad \text{PIANO } \perp \text{ ASSE } x$$

equazione
PIANO xy : $z=0$

equazione
PIANO xz : $y=0$

equazione
PIANO yz : $x=0$