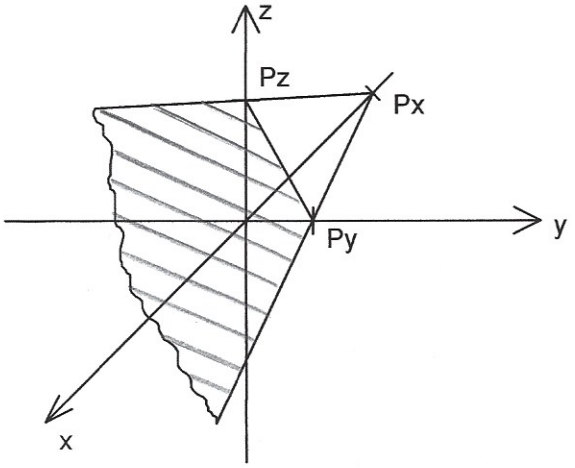
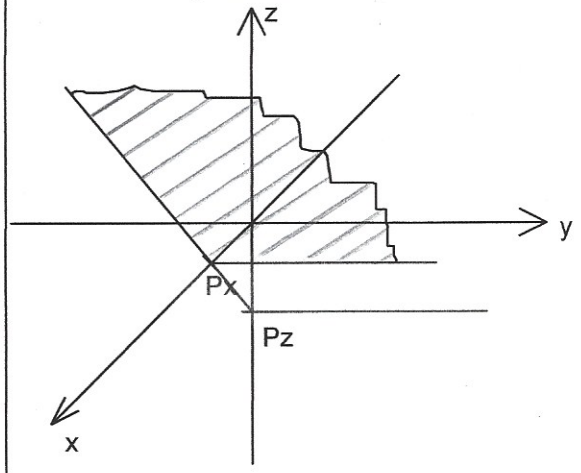
Lösungen zur grafischen Darstellung von Ebenen
(im I. Oktanten markiert)

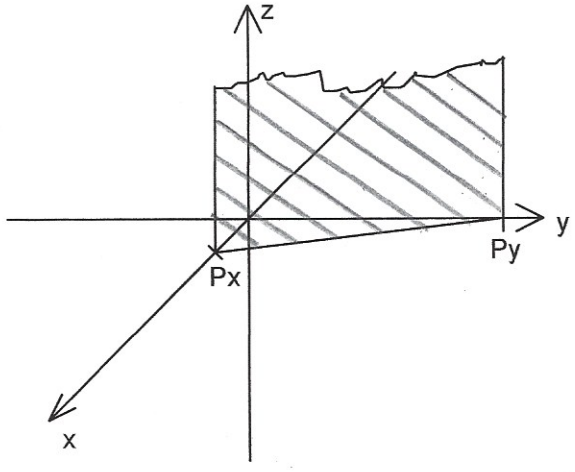
E: -x + 5y + 2z = 10
Spurpunkte Px(-10|0|0); Py(0|2|0); Pz(0|0|5)
Spurgeraden: xyE: x + 5y = 10
xzE: x + 2z = 10
yzE: 5y + 2z = 10



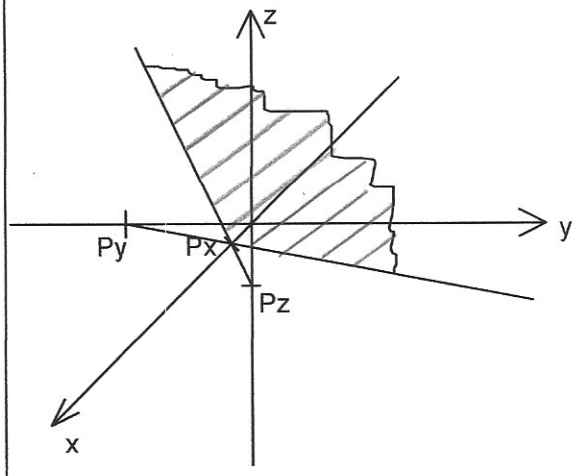
E: 2x - 3z = 6
Spurpunkte Px(3|0|0); Py(ex. nicht); Pz(0|0|-2)
Spurgeraden: xyE: 2x = 6
xzE: 2x - 3z = 6
yzE: 3z = 6



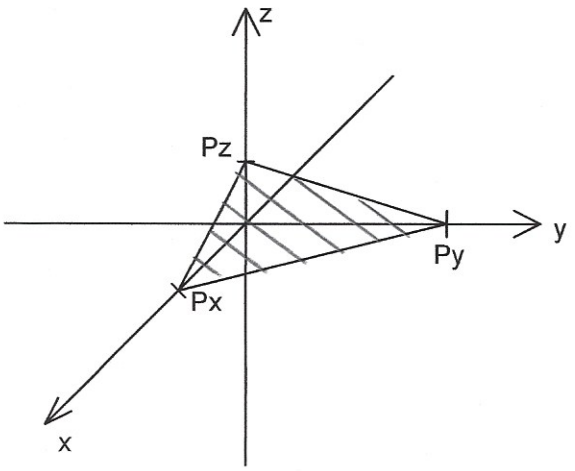
E: 4x + y = 8
Spurpunkte Px(2|0|0); Py(0|8|0); Pz(ex. nicht)
Spurgeraden: xyE: 4x + y = 8
xzE: 4x = 8
yzE: y = 8



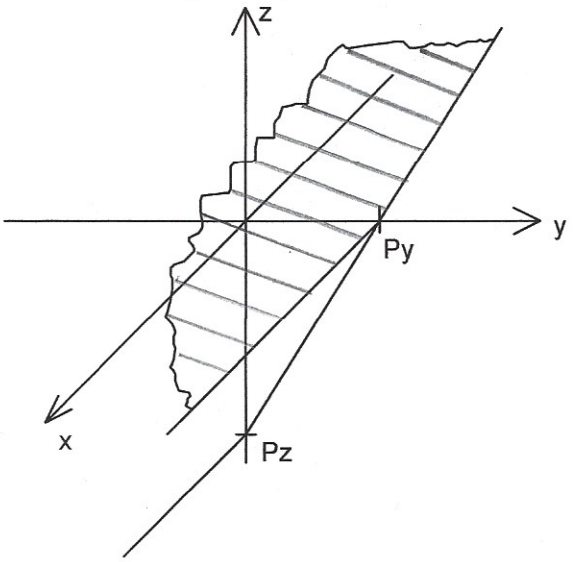
E: 3x - y - 2z = 1
Spurpunkte Px(1/3|0|0); Py(0|-1|0); Pz(0|0|-0.5)
Spurgeraden: xyE: 3x - y = 1
xzE: 3x -2z = 1
yzE: -y - 2z = 1



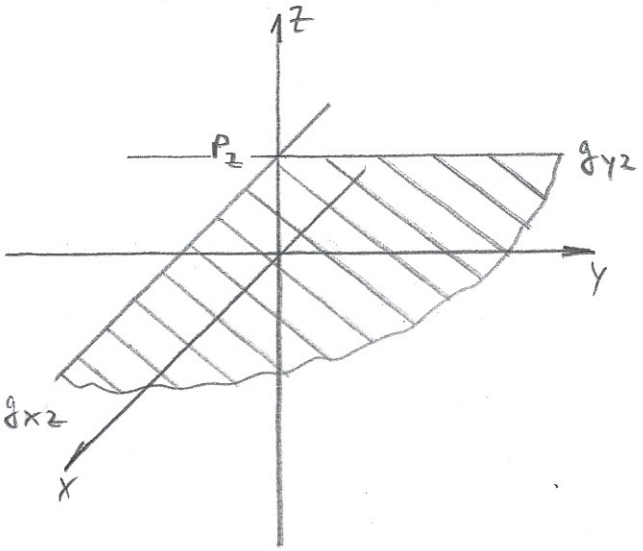
E: x + y + 3z = 12
Spurpunkte Px(12|0|0); Py(0|12|0); Pz(0|0|4)
Spurgeraden: xyE: x + y = 12
xzE: x + 3z = 12
yzE: y + 3z = 12

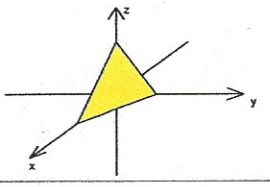
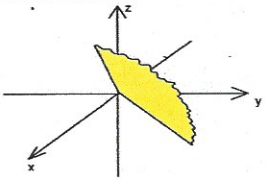
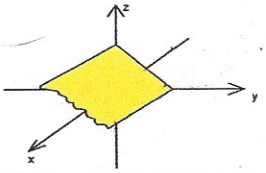
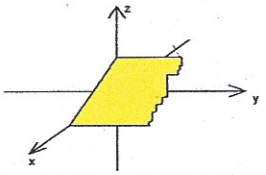
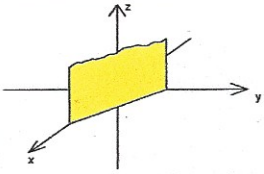
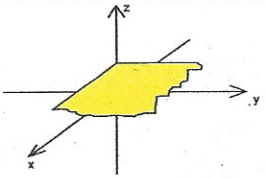
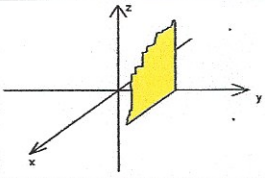


E: -6y + 4z = -28
Spurpunkte Px(ex. nicht); Py(0|4,67|0); Py(0|0|-7)
Spurgeraden: xyE: -6y = -28
xzE: 4z = -28
yzE: -6y + 4z = -28



E: 5z = 15
Spurpunkte Px(ex. nicht); Py(ex. nicht); Pz(0|0|3)
Spurgeraden: xyE: ex. nicht
xzE: 5z = 15 → z = 3 || x-Achse
yzE: 5z = 15 → z = 3 || y-Achse



Ebene ...	Gleichung	Anzahl/Lage Spurpunkte Spurgeraden	Skizze im I. Oktant
in allgemeiner Lage	ax+by+cz=d	xyE xzE yzE 3/Px,Py,Pz	
durchläuft in allgemeiner Lage 0	ax+by+cz=0	xyE xzE yzE 1/0	
parallel zur x-Achse	by+cz=d	2 paralleleSG zur x-A., yzE 2/Py,Pz	
parallel zur y-Achse	ax+cz=d	2 parallele SG zur y-A., xzE 2/Px,Pz	
parallel zur z-Achse	ax+by=d	2 parallele SG zur z-A., xyE 2/Px,Py	
parallel zur x und y-Achse (parallel zur xy-Ebene)	cz=d	xzE: ∥ xA yzE: ∥ yA 1/Pz	
parallel zur x und z-Achse (parallel zur xz-Ebene)	by=d	xyE: ∥xA yzE: ∥zA 1/Py	
parallel zur y und z-Achse (parallel zur yz-Ebene)	ax=d	xyE: ∥yA xzE: ∥zA 1/Px