

5.4.  $\pi$  plan

$$A(3, 5, -7) \in \pi$$

$$\text{ec. lui } \pi \text{ prin } \text{f\o{ietec}} \quad \frac{x}{a} + \frac{y}{b} + \frac{z}{c} - 1 = 0$$

$$a, b, c \text{ puncte de } \text{f\o{ietec}} \Rightarrow |a| = |b| = |c|$$

$$\text{noti: } k = |a| = |b| = |c|$$

$$(1) a = b = c = k, a, b, c > 0$$

$$\frac{x}{a} + \frac{y}{b} + \frac{z}{c} - 1 = 0 \quad | \cdot k$$

$$x + y + z - k = 0 \Rightarrow 3 + 5 - 7 - k = 0 \Rightarrow k = 1 \Rightarrow$$

$$\Rightarrow \text{ec. } \underline{x + y + z - 1 = 0}$$

$$(2) a = b = -c = k, a, b > 0, c < 0$$

$$x + y + z - 1 = 0 \Rightarrow 3 + 5 + 7 - k = 0 \Rightarrow k = 15 \Rightarrow$$

$$\Rightarrow \text{ec. } \underline{x + y + z - 15 = 0}$$

$$(3) a = -b = c = k, a, c > 0, b < 0$$

$$x - y + z - 1 = 0 \Rightarrow 3 - 5 - 7 - k = 0 \Rightarrow k = -9 < 0 \text{ Nu convine}$$

$$(4) a = -b = -c = k, b, c < 0, a > 0$$

$$x - y - z - k = 0 \Rightarrow 3 - 5 + 7 - k = 0 \Rightarrow k = 5 \Rightarrow$$

$$\Rightarrow \text{ec. } \underline{x + y + z - 5 = 0}$$

$$(5) -a = b = c = k, b, c > 0, a < 0$$

$$-x + y + z - k = 0 \Rightarrow -3 + 5 - 7 - k = 0 \Rightarrow k = -5 < 0 \text{ Nu convine}$$

$$(6) -a = b = -c = k$$

$$-x + y - z - k = 0 \Rightarrow -3 + 5 + 7 - k = 0 \Rightarrow k = 9 \Rightarrow$$

$$\Rightarrow \text{ec. } \underline{x + y + z - 9 = 0}$$

$$(7) -a = -b = c = k, \quad c > 0 \quad a, b < 0$$

$$-x - y + z - k = 0 \Rightarrow -3 - 5 - 7 - k = 0 \Rightarrow k = -15 \quad \underline{\text{No code}}$$

$$(8) -a = -b = -c = k, \quad a, b, c < 0$$

$$-x - y - z - k = 0 \Rightarrow -3 - 5 + 7 - k = 0 \Rightarrow k = -1 < 0 \quad \underline{\text{No code}}$$