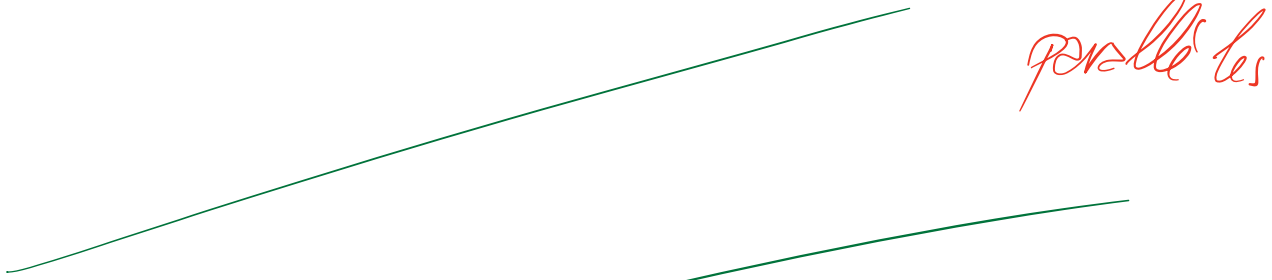
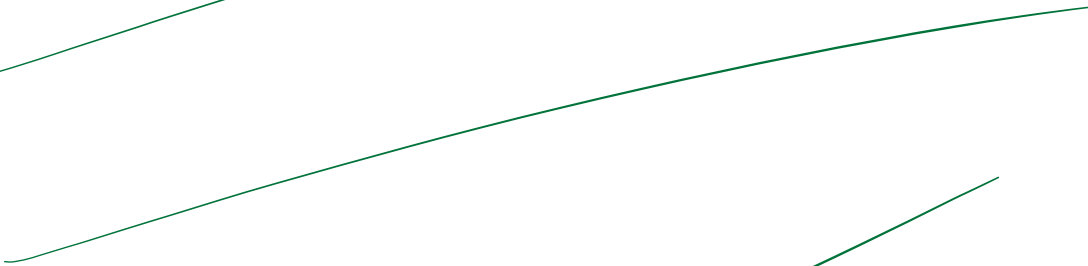


1.3.16

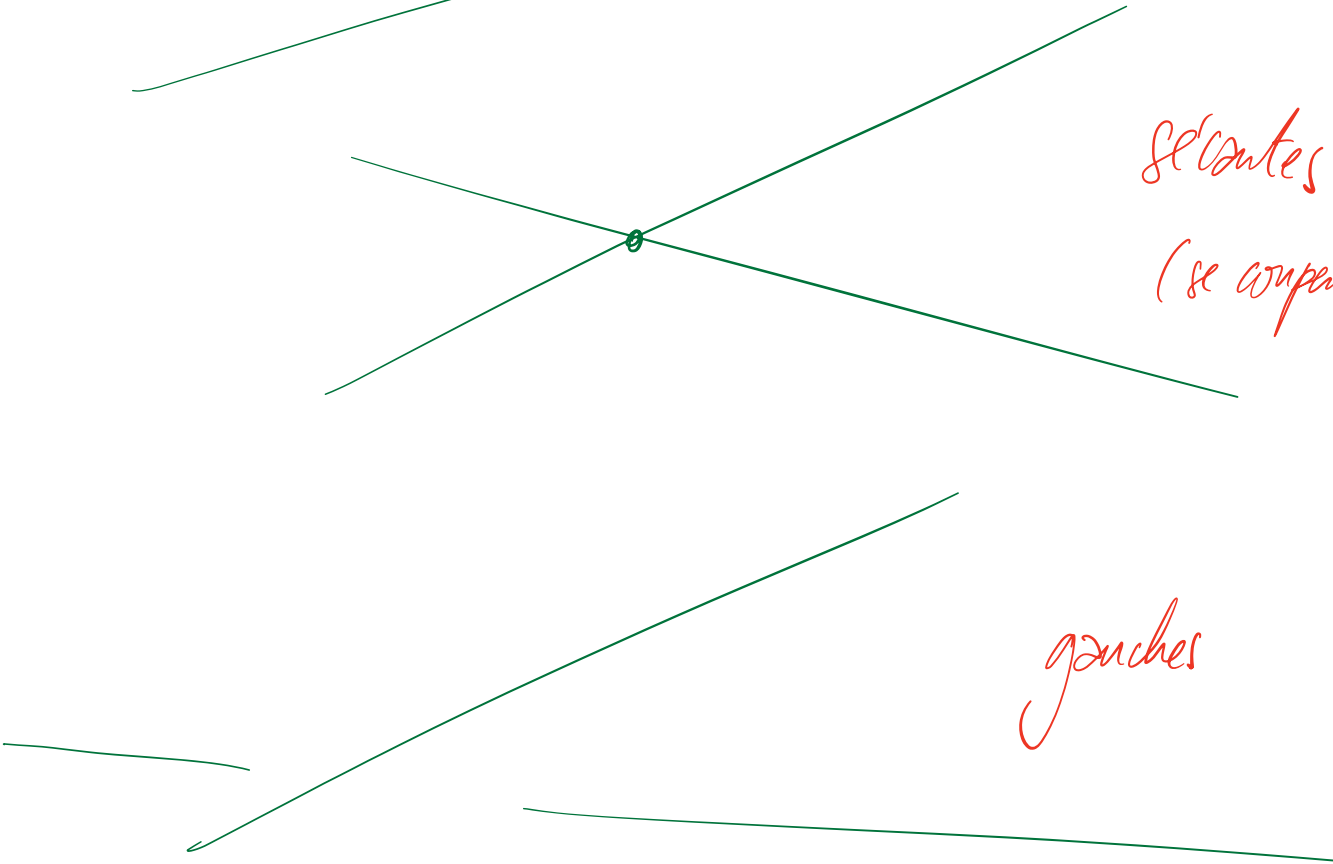
Droite dans l'espace



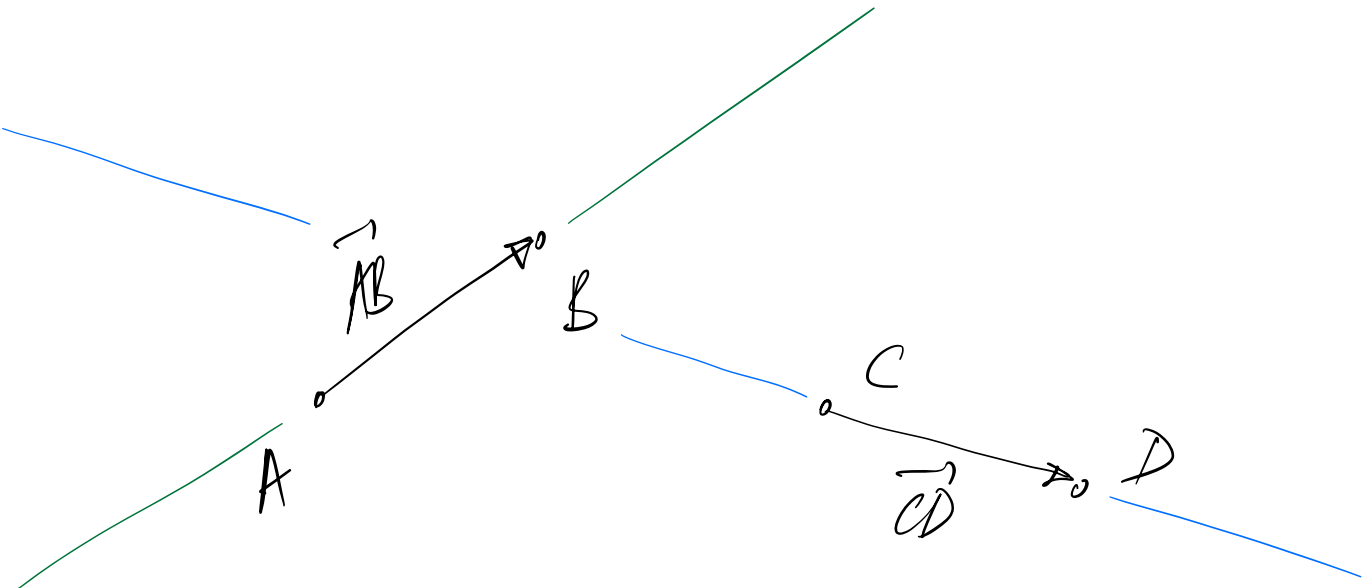
parallèles

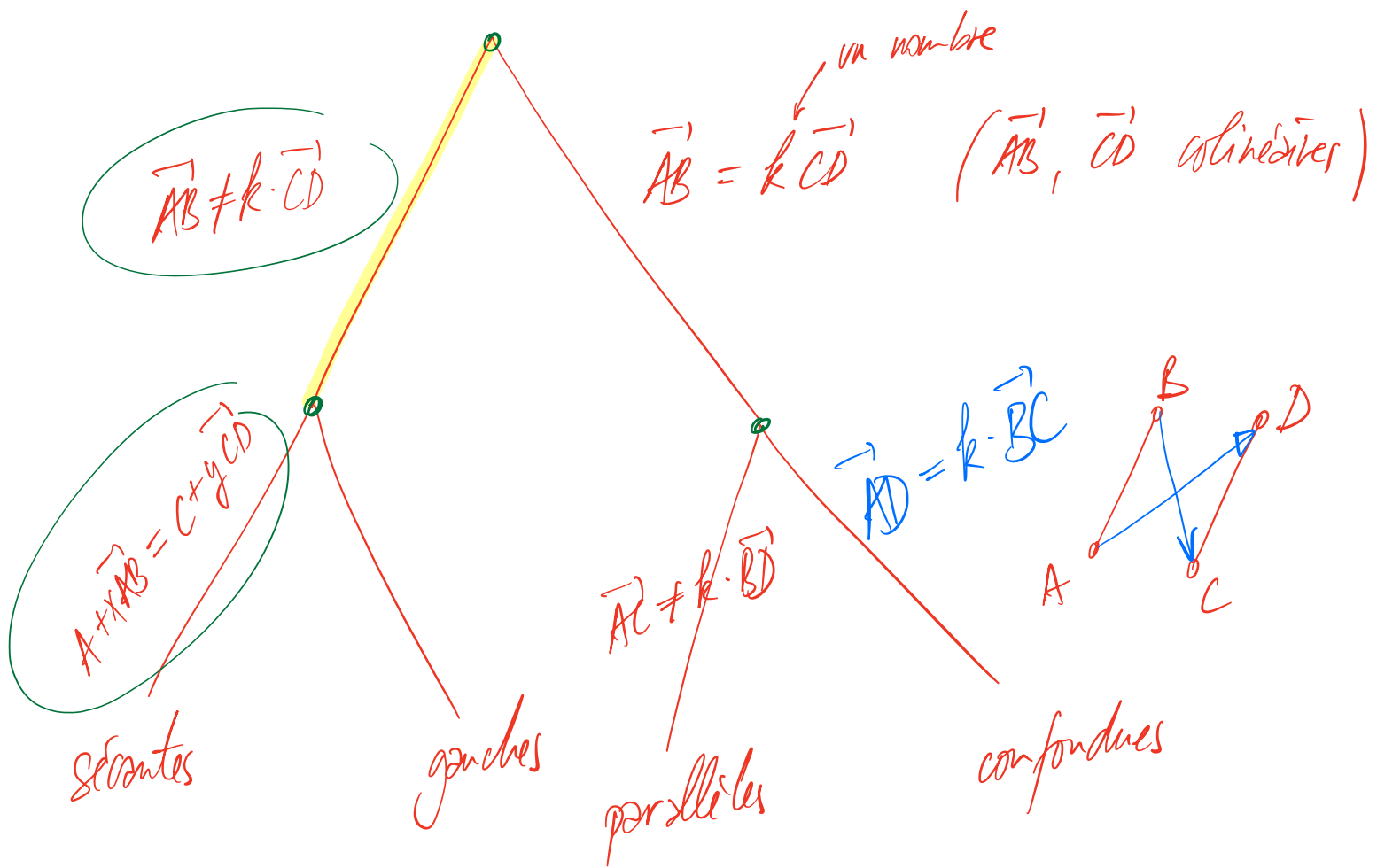


secantes
(se coupent)



gauches





Exemple : $A(1; 2; -1)$
 $B(3; 1; -4)$

$C(4; 2; 2)$

$D(1; 1; -3)$

$$\vec{AB} = \begin{pmatrix} 3-1 \\ 1-2 \\ -4+1 \end{pmatrix} = \begin{pmatrix} 2 \\ -1 \\ -3 \end{pmatrix}$$

$$\vec{CD} = \begin{pmatrix} 1-4 \\ 1-2 \\ -3-2 \end{pmatrix} = \begin{pmatrix} -3 \\ -1 \\ -5 \end{pmatrix}$$

B-A

D-C

$$\vec{AB} \stackrel{?}{=} k \cdot \vec{CD}$$

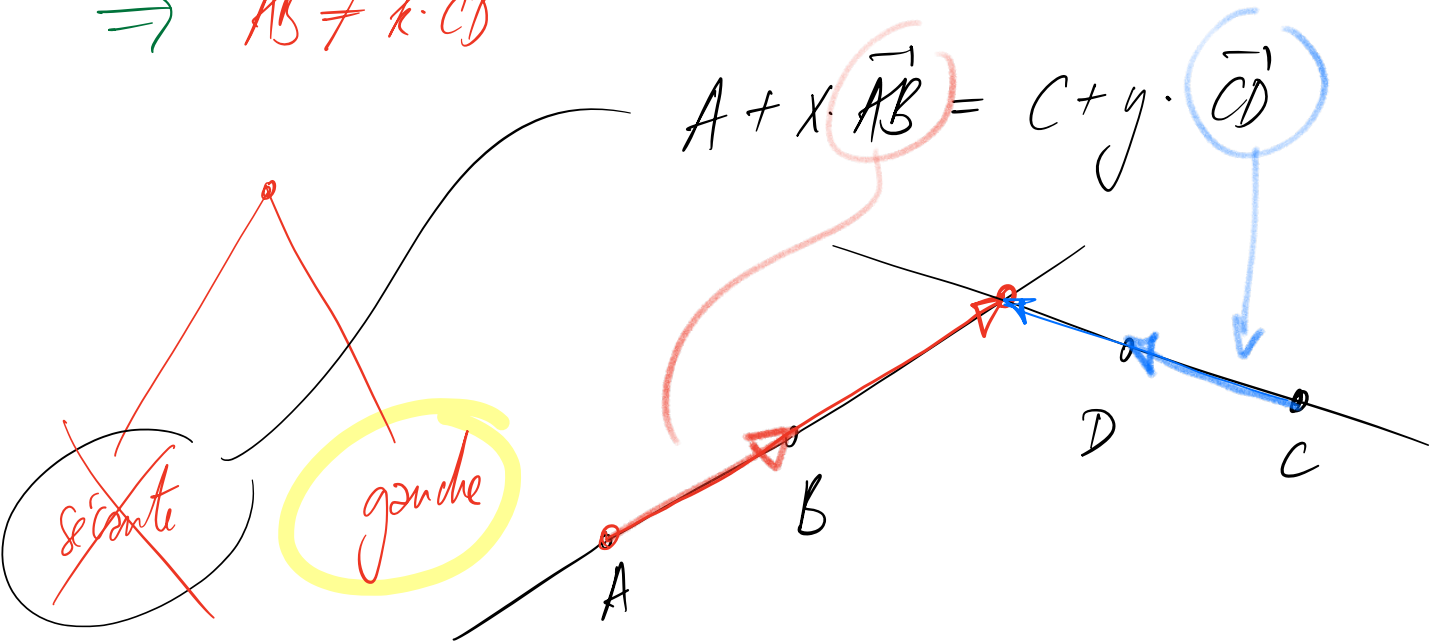
$$\begin{pmatrix} 2 \\ -1 \\ -3 \end{pmatrix} = k \begin{pmatrix} -3 \\ -1 \\ -5 \end{pmatrix} \Rightarrow$$

$$\begin{array}{l|l} 2 = -3 \cdot k & k = -2/3 \\ -1 = -1 \cdot k & k = 1 \\ -3 = -5 \cdot k & k = 3/5 \end{array}$$

contradictoire

⇒ On ne peut pas trouver de valeur pour k .

⇒ $\vec{AB} \neq k \cdot \vec{CD}$



$$\begin{pmatrix} 1 \\ 2 \\ -1 \end{pmatrix} + x \begin{pmatrix} 2 \\ -1 \\ 3 \end{pmatrix} = \begin{pmatrix} 4 \\ 2 \\ 2 \end{pmatrix} + y \begin{pmatrix} -3 \\ -1 \\ -5 \end{pmatrix}$$

$$\Leftrightarrow \begin{cases} 1 + 2x = 4 - 3y & L_1 \leftarrow L_1 + 2L_2 & 5 + 0x = 8 - 5y \\ 2 - x = 2 - y & \cancel{2} - x = \cancel{2} - \frac{x}{5} & -3 = -5y \quad (y = 3/5) \\ -1 + 3x = 2 - 5y & & \end{cases}$$

$$L_3 \quad \boxed{-1 + \frac{9}{5} = 2 - 3 = -1} \Rightarrow \frac{9}{5} = 0 \quad \downarrow$$

$$\boxed{18 = 0}$$