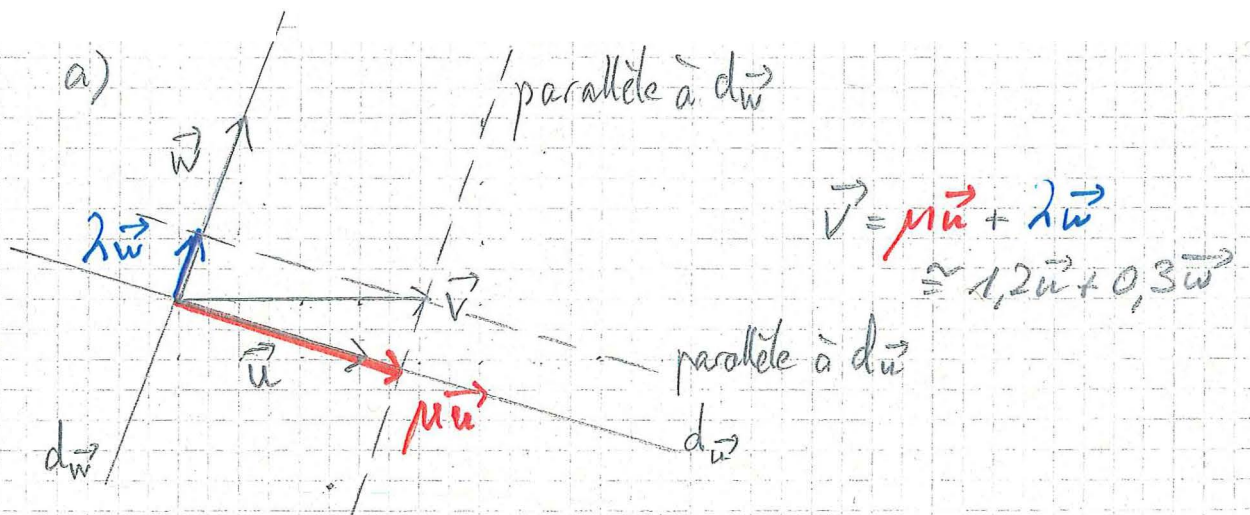
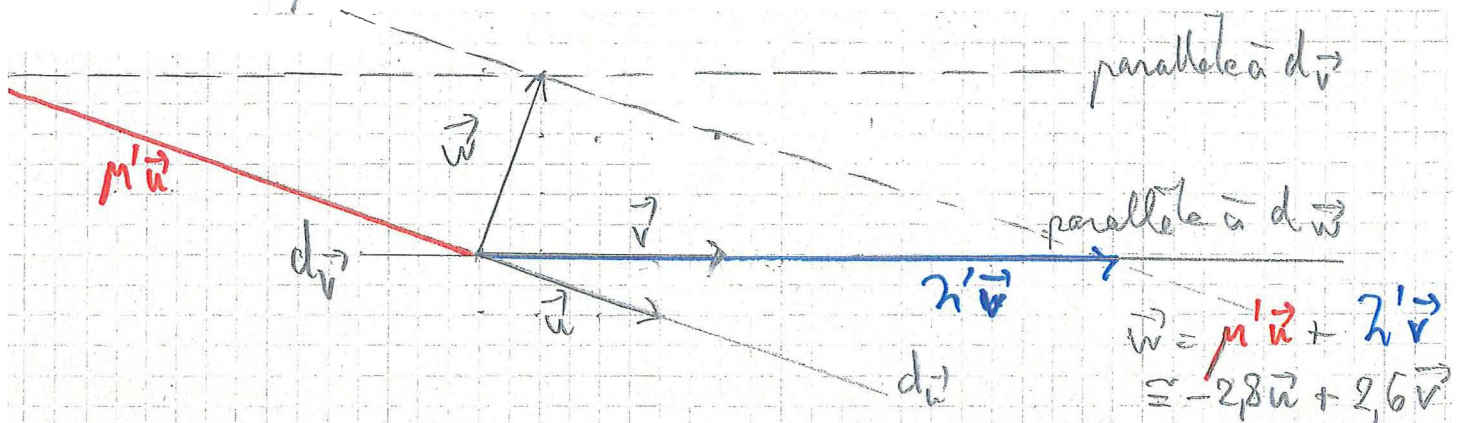


ex 6

a)



b)



ex 7

$$a) \vec{f} = (-1) \vec{a}$$

$$b) \vec{f} = (-1) \cdot \vec{g} + (-1) \cdot \vec{c}$$

$$c) \vec{c} = (-1) \vec{g} + (-1) \vec{e} + (-1) \vec{d} + 0 \cdot \vec{f}$$

$$d) \vec{g} = (-1) \vec{c} + 1 \cdot \vec{e} + (-1) \vec{d}$$

ex 8

$$a) \vec{f} = 0,9 \vec{d} + (-0,4) \vec{c} ; \text{ sol. unique}$$

$$b) \text{ impossible}$$

$$c) \vec{c} = (-1) \vec{d} + (-1) \vec{e} + 1 \cdot \vec{g}$$

$$\text{ou } \vec{c} = (-1) \vec{d} + \left(\frac{8}{3}\right) \vec{e} + 0 \vec{g}$$

$$\text{ou } \vec{c} = -1 \cdot \vec{d} + 0 \cdot \vec{e} + \left(\frac{8}{3}\right) \vec{g} \dots$$

ex 9

$$a) \vec{a} = \underbrace{\vec{EB} + \vec{BC}}_{\vec{EC}} + \underbrace{\vec{AD} + \vec{DE}}_{\vec{AE}} + \vec{DC} = \underbrace{\vec{AE} + \vec{EC}}_{\vec{AC}} + \vec{DC} = \vec{AC} + \vec{DC}$$

$$b) \vec{b} = \vec{AC} + \underbrace{\vec{DB} + \vec{BA}}_{\vec{DA}} = \vec{DA} + \vec{AC} = \vec{DC}$$

$$c) \vec{c} = \underbrace{\vec{EC} + \vec{CB}}_{\vec{EB}} + \vec{DE} + \vec{BD} = \underbrace{\vec{EB} + \vec{CD}}_{\vec{ED}} + \vec{DE} = \underbrace{\vec{ED} + \vec{DE}}_{\vec{EE}} = \vec{0}$$

$$d) \vec{d} = \vec{AB} + 2\vec{AB} + 2\vec{BC} + \vec{BD}$$

$$= \vec{AB} + 2(\vec{AB} + \vec{BC}) + \vec{BD}$$

$$= \vec{AB} + 2\vec{AC} + \vec{BD} = \underbrace{\vec{AB} + \vec{BD}}_{\vec{AD}} + 2\vec{AC} = \vec{AD} + 2\vec{AC}$$

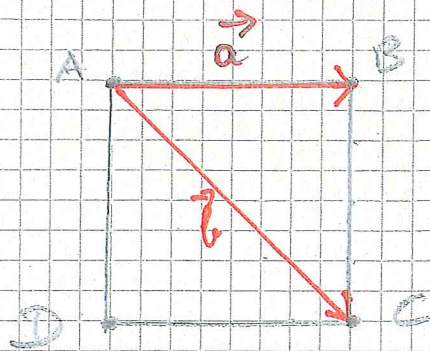
$$e) \vec{e} = 87\vec{AC} + 82\vec{CD} + 3\vec{AD}$$

$$= 5\vec{AC} + 82(\vec{AC} + \vec{CD}) + 3\vec{AD}$$

$$= 5\vec{AC} + 82\vec{AD} + 3\vec{AD}$$

$$= 5\vec{AC} + 85\vec{AD}$$

ex 10



$$\vec{AB} = 1 \cdot \vec{a} + 0 \cdot \vec{b}$$

$$\vec{BC} = -\vec{a} + \vec{b} = (-1)\vec{a} + 1\vec{b}$$

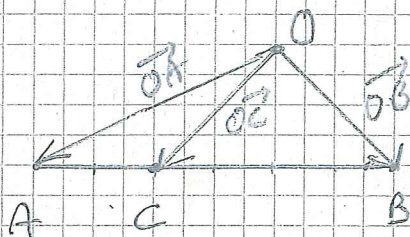
$$\vec{CB} = -\vec{BC} = (1)\vec{a} + (-1)\vec{b}$$

$$2\vec{DA} = 2\vec{CB} = 2[1\vec{a} + (-1)\vec{b}] = 2\vec{a} - 2\vec{b}$$

$$\vec{DB} = \vec{DA} + \vec{AB}$$

$$\text{cf pt } \vec{DB} = [(-1)\vec{b} + \vec{a}] + \vec{a} = (-1)\vec{b} + 2\vec{a}$$

ex 11



$$\vec{OC} = \vec{OA} + \vec{AC}$$

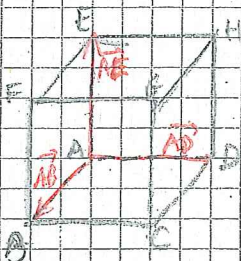
$$= \vec{OA} + \frac{1}{3}\vec{AB}$$

$$= \vec{OA} + \frac{1}{3}[\vec{AO} + \vec{OB}]$$

$$= \vec{OA} + \frac{1}{3}[-\vec{OA} + \vec{OB}]$$

$$= \vec{OA} + (-\frac{1}{3})\vec{OA} + \frac{1}{3}\vec{OB} = \frac{2}{3}\vec{OA} + \frac{1}{3}\vec{OB}$$

ex 12



$$a) \vec{AC} = \vec{AB} + \vec{BC} (= 1 \cdot \vec{AB} + 1 \cdot \vec{BC})$$

$$\vec{BD} = -\vec{AB} + \vec{AD} (= (-1)\vec{AB} + 1 \cdot \vec{AD})$$

$$\vec{EG} = \vec{AC} = \vec{AB} + \vec{BC} (= 1 \cdot \vec{AB} + 1 \cdot \vec{BC})$$

$$\vec{AG} = \vec{AE} + \vec{EG} = \vec{AE} + \vec{AB} + \vec{BC} (= 1 \cdot \vec{AE} + 1 \cdot \vec{AB} + 1 \cdot \vec{BC})$$

$$\vec{DF} = \vec{DH} + \vec{HF} = \vec{DE} + \vec{EB} = \vec{DE} + (-\vec{BD})$$

$$= \vec{DE} + \vec{AB} - \vec{AD} (= 1 \cdot \vec{DE} + 1 \cdot \vec{AB} + (-1)\vec{AD})$$

$$\vec{CE} = \vec{CA} + \vec{AE} = -(\vec{AC}) + \vec{AE} = -\vec{AB} - \vec{BC} + \vec{AE}$$

$$= (-1)\vec{AB} + (-1)\vec{BC} + 1 \cdot \vec{AE}$$

$$1) \|\vec{AC}\|^2 = 1^2 + 1^2 \Rightarrow \|\vec{AC}\| = \sqrt{2}$$

$$\|\vec{BD}\| = \|\vec{EG}\| = \sqrt{2} \text{ (idem)}$$

$$\|\vec{AG}\|^2 = \|\vec{AC}\|^2 + \|\vec{CG}\|^2 = (\sqrt{2})^2 + 1^2 = 3 \Rightarrow \|\vec{AG}\| = \sqrt{3}$$

$$\|\vec{DF}\| = \|\vec{CE}\| = \sqrt{3} \text{ (idem)}$$