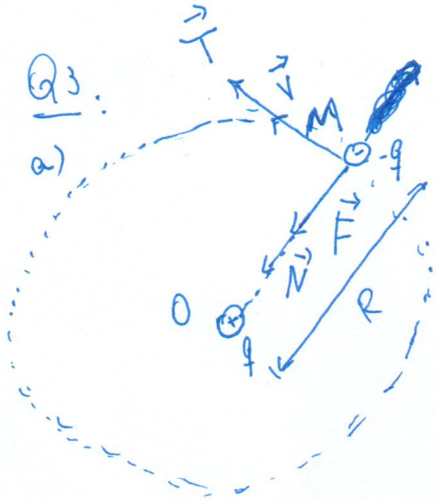
e) Continuation.

de (1^*) $m\ddot{s}(0) = mg \cdot 1 - 0 \Rightarrow \boxed{\ddot{s}(0) = g}$

en résumé : $\boxed{\begin{array}{l} f(0) = 0\ N \\ R_N(0) = 0\ N \\ \ddot{s}(0) = g \end{array}}$

Q3.

a)



b) $\vec{OM} = -R\vec{N}$

$\vec{V} = \dot{s}\,\vec{T} = v\,\vec{T}$

pour simplifier.

$\vec{F} = \dfrac{q^2}{4\pi\varepsilon_0 R^2}\,\vec{N}$, $k := \dfrac{q^2}{4\pi\varepsilon_0 R^2}$ $\left(\vec{F} = k\vec{N}\right.$

c) $\vec{M}_0(\vec{F}) = \vec{OM} \wedge \vec{F} = -R\vec{N} \wedge k\vec{N} = -Rk\,\vec{N}\wedge\vec{N} = -Rk\,\vec{0} = \vec{0}$

d) Oui, car $\dfrac{d\vec{L_0}}{dt} = \vec{M}_0(\vec{F}) = \vec{0}$, donc $\vec{L_0}$ = vecteur constant

e) $\vec{L}_0 = \vec{OM} \wedge m\vec{v} = -R\vec{N} \wedge m v\vec{T} = -mvR\ \vec{N}\wedge\vec{T}$

$= -mvR\,(-\vec{B}) = mvR\,\vec{B}$