```
In[]:= << Notation`

In[]:= << MaTeX`

In[]:= Γ[q_][t_] := Prepend[Table[D[q[t], {t, i}], {i, 0, 1}], t]

In[]:= dotrules =
         {Times[1.`, vx_] :> vx, Times[0.1`, vx_] :> vx, Dot[1, vx_] :> vx, Dot[vx_, 1] :> vx};

In[]:= dotrules

Out[]= {1. vx_ :→ vx, 0.1 vx_ :→ vx, 1. (vx_) :→ vx, (vx_) .1 :→ vx}

In[]:= pd1[L_][args__] :=
         Block[{nargs = Length[List[args][[2]]]},
           If[nargs > 1,
             Table[(Derivative[0, ReplacePart[ConstantArray[0, nargs], i -> 1],
                  ConstantArray[0, nargs]][L] /. dotrules)[args], {i, 1, nargs}]
             ,
             (Derivative[0, 1, 0][L] /. dotrules)[args]
           ]
         ]

In[]:= pd2[L_][args__] :=
         Block[{nargs = Length[List[args][[2]]]},
           If[nargs > 1,
             Table[
            (Derivative[0, ConstantArray[0, nargs], ReplacePart[ConstantArray[0, nargs],
                  i -> 1]][L] /. dotrules)[args], {i, 1, nargs}]
             ,
             (Derivative[0, 0, 1][L] /. dotrules)[args]
           ]
         ]

In[]:= Notation[ d/dt ∂L_/∂q̇_ - ∂L_/∂q_ ⟹ D[(pd2[L_] @@ Γ[q_][t]), t] - pd1[L_] @@ Γ[q_][t] ]

In[]:= Notation[ S_L_[q_][t1_, t2_] ⟹ ∫_t1_^t2_ L_ @@ Γ[q_][t] dt ]

In[]:= Notation[ δ_η_ f_[q_] ⟹ lim_(ϵ→0) ((f_[q_ + ϵ η_] - f_[q_])/ϵ) ]
```