Part IA — Variational Principles Example Sheet 2

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Examples worked through by Christopher Turnbull

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QUESTION 1

$$F[x + \delta x] - F[x] = \int_{t_1}^{t_2} f(x + \delta x, \dot{x} + \delta \dot{x}, \ddot{x} + \delta \ddot{x}, t) \, \mathrm{d}t - \int_{t_1}^{t_2} f(t, x, \dot{x}, \ddot{x}) \, \mathrm{d}t$$
$$=$$