Homework 2
second-cycle degree in Physics (17 April 2020)

- Starting from the *general expression* for the Green's function for a *homogeneous* system, $G_{\alpha\beta}(\mathbf{k},\omega)$, **derive** the formula for the Green's function in the **non-interacting system**, $G_{0\alpha\beta}(\mathbf{k},\omega)$.

- Starting from the *general expressions* for obtaining the expectation value of any *single-particle operator* and the *ground-state energy* of a system from the Green's function, **derive** the expectation value of the **total-number operator <N>** and the **total energy E_0** for the **non-interacting system** of electrons.

deadline : 28 April 2020

N.B. deliver the **solution** by sending (psil@pd.infn.it) a **file** denoted as **SURNAME-Name_2.pdf**   (PDF format only !) , ex. : SMITH-John_2.pdf .