1. Hermitian operators (definition). Prove that kinetic energy operator is Hermitian.

2. Calculate the energy dependencies of reflection coefficient R(E) and transmition coefficient (T(E) for the stepped barrier in the case of $E<U_0$. Why don't particles create a probability current density inside the barrier? What does the reflection process look like?

3. How looks like the electron configuration for O, Al and Li atoms? (explanation)

PS!
http://parsek.yf.ttu.ee/~physics/QM.html