1. Physical interpretation and units of measurement of the wave function in cases 1d, 2d, and 3d.

2. Physical substantiation of the main properties of the wave function.

3. **Prove** the continuity equation for wave function. Probability current density.

5. Show that if the imaginary part of the wave function is equal to zero, then the probability current density for such a system is also equal to zero.

6. Why for the non-stationary Schrödinger equation it is impossible to separate the total wave function into parts depending on time and coordinates, if the potential energy depends on time?

7. Show that the wave functions for one-dimensional motion of a free particle (use periodic boundary conditions) are orthonormal.

8. Give a physical interpretation of the positive and negative values of the quantum number for one-dimensional periodic motion of free particle.

9. Is it possible to calculate the exact value of the coordinate of a particle in states with quantum number n=1? The motion is one-dimensional periodic and free.