

Qualitative Wavefunction Sketches

For each of the potential energy functions shown below, carefully sketch the definite-energy wavefunction(s) indicated, using the same horizontal scale as in the potential energy graph. The subscript '1' indicates the ground state, '2' indicates the first excited state, and so on. The energies of the wavefunctions are represented by dashed lines on the potential energy graphs. Be sure to pay attention to the number of “bumps”, the wavelengths and amplitudes in the classically allowed regions, and the rate of fall-off in the classically forbidden regions.

