

M06Q.1 - One-dimensional Wave Function

Problem

A particle of mass m moves in one dimension to the right of a wall at $x = 0$ in the potential

$$V(x) = -\frac{A}{x}$$

where A is a given positive parameter.

- a) Find the ground state energy.
- b) Find the position expectation value, $\langle x \rangle$, for the ground state.

There is no need to derive whatever “well known” results you find applicable here.