

Exercise 10

Derive the mean value property of harmonic functions $u(x, y, z)$ by the following method. A harmonic function is a wave that happens not to depend on time, so that its mean value $\bar{u}(r, t) = \bar{u}(r)$ satisfies (5). Deduce that $\bar{u}(r) = u(\mathbf{0})$.