HW #11c

Math 182, Spring 2009

Due Friday, May 1, 2009, by 11:00 a.m.

1. Check the validity of the maximum principle for the harmonic function

$$u(x,y) = \frac{4 - x^2 - y^2}{4 - 4x + x^2 + y^2}$$

in the domain $D = \{x^2 + y^2 \leq 1\}$.

2. A function $u(x,y)$ is subharmonic in a domain D if $\triangle u \geq 0$ in D. Let D be a bounded domain. Show that the maximum of a subharmonic function u in $\overline{D}$ occurs on the boundary of D, ∂D.