## Problem 405A

A solid surface is characterized as having a nucleation site density distribution function, $N(R)$, where $N(R)dR$ is the number of sites with size between $R$ and $R + dR$ per unit area of the surface. The sites are assumed to have a circular opening of radius, $R$. If the critical tension is assumed to be $2S/R$ where $S$ is the surface tension and if the distribution function has the form

$$N(R) = N^*/R^3 \tag{1}$$

find the relation between the superheat and the number of activated nucleation sites per unit surface area.