Homework #5:

1-2. A circular aperture of radius $R$ is illuminated with a plane wave. Using the Fresnel transform, calculate the on-axis intensity as a function of distance from the aperture, and as a function of the Fresnel number $\frac{R^2}{4\lambda z}$.

3. A Fresnel zone plate of focal length $f$ (for wavelength $\lambda$) is made up of $M$ zones, $M \gg 1$. Compare the resolution of this lens with the distance between the outermost zones.