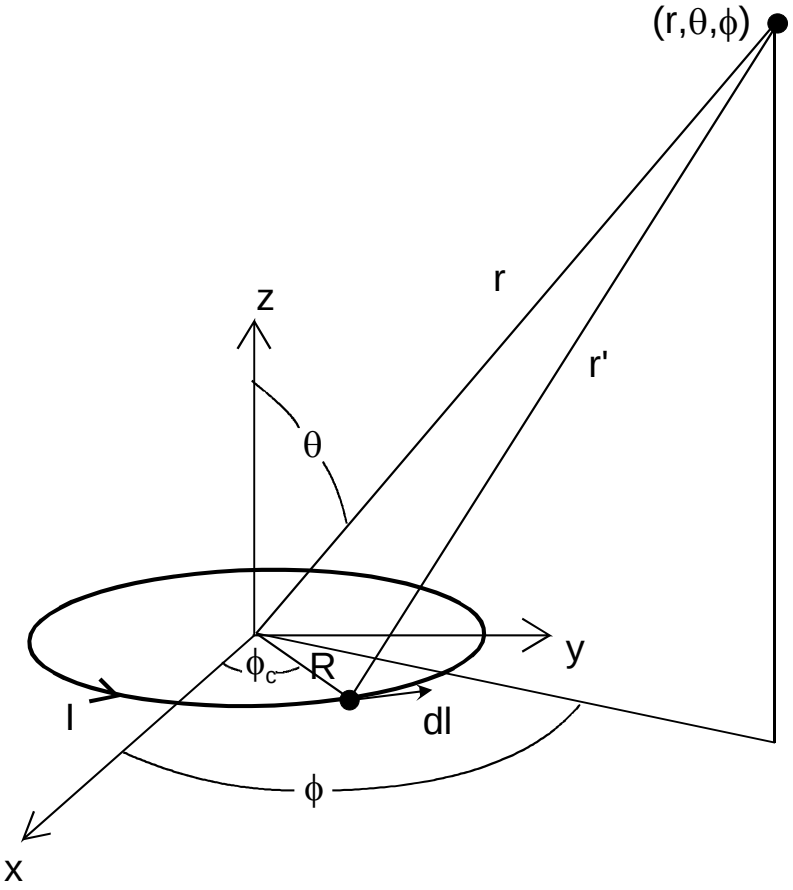
ELEG240- Spring, 2006
Homework 5
Due 3/17, noon

1. For the circular current ring shown below, for the current element shown, what is **dA**(r,θ,φ)? Hint: you cannot assume r=r' for this problem. Hint 2: write the answer in Cartesian coordinates, that is, actually give me **dA**(x,y,z) in terms of x, y, z, R and ϕ_c.



2. Now, find **A**. Hint: do you have to find **A** everywhere to know what it is everywhere? Hint 2: after using this hint, convert r' back to spherical coordinates and then approximate r>>R. Hint 3: you will need $(1-x)^{-1/2} \cong 1+x/2$.