$electromagnetism \rightarrow electrostatics$

Capacitance of 2 Cylinders

(a) Suppose that you have two parallel line charges, one with charge per unit length λ , and one with charge per unit length $-\lambda$. Let the distance of separation between them be d.



Show that the equipotential curves (in the plane) are circles, and relate their radius and center to λ , d, and the potential φ .

(b) Use the result of part (a) to show that the capacitance per unit length of two parallel right cylinders of radii a and b, separated by a distance d > a + b, is given by

