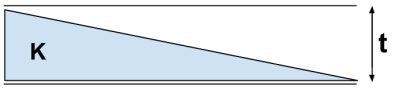

A parallel plate capacitor has a capacitance C when there is no dieletric inside of it. Suppose a wedge of material with dielectric constant K is inserted in between the plates of the capacitor (see figure). The bottom face of the wedge has the same area as the plate of the capacitor. The height of the wedge is equal to the thickness of the capacitor, t on the left edge and varies linearly until the height is zero on the right edge. What is the new capacitance with this dielectric inserted?
HINT: See if you can split up the capacitor into small capacitors that each have a dielectric in them that you know how to deal with.