

## Assume the Position

A parallel plate capacitor with area  $A$  has the space between the plates filled with two slabs of dielectric, one with constant  $\kappa_1$ , the other with constant  $\kappa_2$ . Each slab has a thickness  $d$ , where  $d$  is the plate separation, and each slab fills half the volume between the plates.

Derive an expression for the capacitance using  $A$ ,  $d$ ,  $\kappa_1$ ,  $\kappa_2$ , and the usual constants.

