**24.71.** A parallel-plate capacitor has the space between the plates filled with two slabs of dielectric, one with constant $K_1$ and one with constant $K_2$ (Fig. 24.37). Each slab has thickness $d/2$, where $d$ is the plate separation. Show that the capacitance is

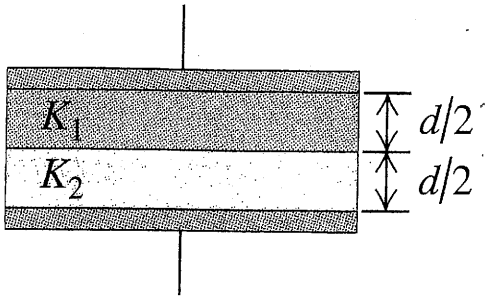


Figure **24.37** Problem 24.71.

$$C = \frac{2\epsilon_0 A}{d}\left(\frac{K_1 K_2}{K_1 + K_2}\right)$$