

95. **SSM** *REASONING AND SOLUTION* Let C_0 be the capacitance of an empty capacitor. Then the capacitances are as follows, according to the discussion following Equation 19.10:

$$C_1 = 3.00C_0 \quad \text{and} \quad C_2 = 5.00C_0$$

The series capacitance of the two is

$$\frac{1}{C_s} = \frac{1}{2.50C_0} + \frac{1}{4.00C_0} \quad \text{or} \quad C_s = 1.54C_0$$

Now

$$\kappa C_0 = 1.54C_0 \quad \text{or} \quad \kappa = \boxed{1.54}$$