**CW 13.7 – Capacitors Name: ……………………………..**

1. How much charge can be stored on each plate of a 4.00 µF capacitor when it is connected to a 12.0 V battery? (1)
2. Consider the Earth and a cloud layer 800 m above the surface to be the plates of a huge capacitor. The area of the cloud layer is 1.0 km2.
3. What is the capacitance? (2)
4. If an electric field strength of greater than 3.0 x 106 N/C causes the air to break down and cause the charge to flow (lightning), what is the maximum charge that the cloud can hold? (2)
5. What is the voltage between the cloud layer and the ground? (2)
6. The potential difference between a pair of parallel plates is 400 V. If the spacing between the plates is doubled without altering the charge, what is the new potential difference between the plates? (2)
7. A 1 megabit computer memory chip contains many 60.0 x 10-15 F capacitors. Each capacitor has an area of 21.0 x 10-12 m2. Determine the plate separation. (2)
8. Find the equivalent capacitance of the circuit below. (2)
9. Four capacitors are connected as shown below.
10. Find the equivalent capacitance of the circuit. (2)
11. Calculate the charge on EACH capacitor if the voltage across the circuit is 15.0 V. (3)

