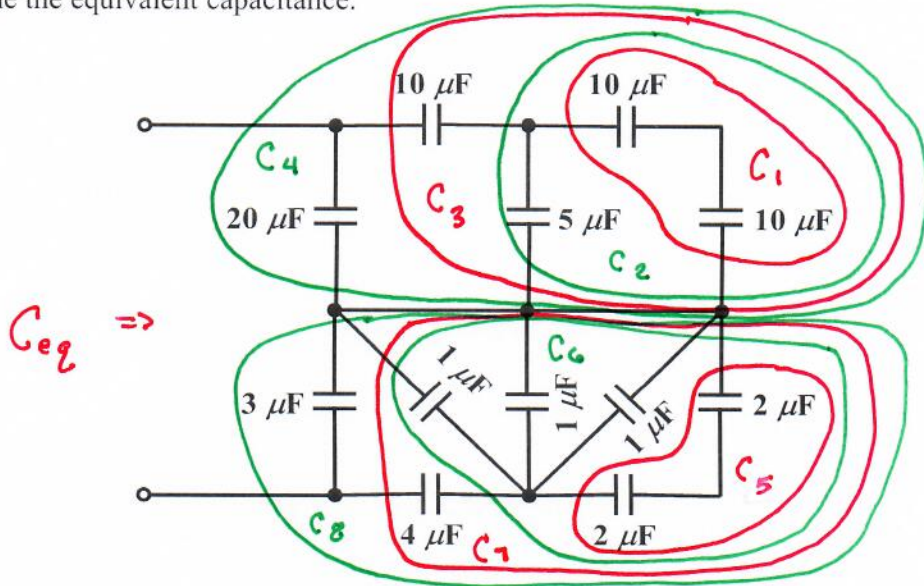


Homework Problem #044

Determine the equivalent capacitance.



$$C_1 = \frac{10\mu\text{F} \cdot 10\mu\text{F}}{10\mu\text{F} + 10\mu\text{F}} = 5\mu\text{F}$$

$$C_2 = 5\mu\text{F} + C_1 = 10\mu\text{F}$$

$$C_3 = \frac{10\mu\text{F} \cdot C_2}{10\mu\text{F} + C_2} = 5\mu\text{F}$$

$$C_4 = 20\mu\text{F} + C_3 = 25\mu\text{F}$$

$$C_5 = \frac{2\mu\text{F} \cdot 2\mu\text{F}}{2\mu\text{F} + 2\mu\text{F}} = 1\mu\text{F}$$

$$C_6 = 1\mu\text{F} + 1\mu\text{F} + 1\mu\text{F} + C_5 = 4\mu\text{F}$$

$$C_7 = \frac{4\mu\text{F} \cdot C_6}{4\mu\text{F} + C_6} = 2\mu\text{F}$$

$$C_8 = 3\mu\text{F} + C_7 = 5\mu\text{F}$$

$$C_{eq} = \frac{C_4 \cdot C_8}{C_4 + C_8} = \frac{25}{6} \mu\text{F}$$