

# Spojovací kondenzátory

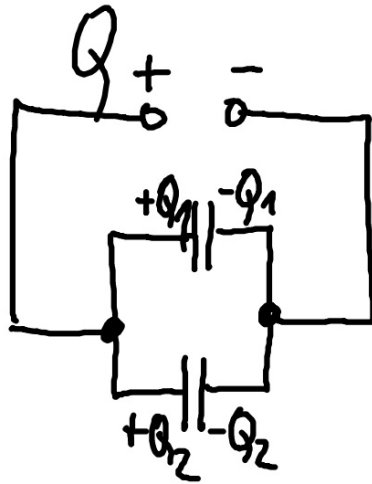
## 1) Paralelně

$$Q = Q_1 + Q_2$$

$U$  všude stejná

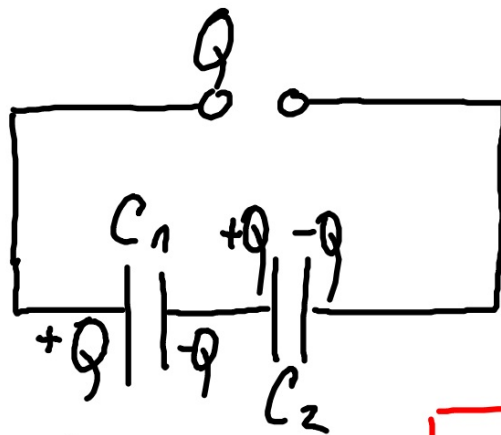
$$CU = C_1 U + C_2 U \quad /: U$$

$$C = C_1 + C_2$$



$$C = \frac{Q}{U}$$
$$Q = CU$$
$$U = \frac{Q}{C}$$

## 2) Série



Q řáde stejné

$$U = U_1 + U_2$$

$$\frac{Q}{C} = \frac{Q}{C_1} + \frac{Q}{C_2} \quad /: Q$$

$$\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2}$$

$$\frac{1}{C} = \frac{C_2 + C_1}{C_1 C_2}$$

$$C = \frac{C_1 C_2}{C_1 + C_2}$$

$$C_1 = 2$$

$$C_2 = 3$$

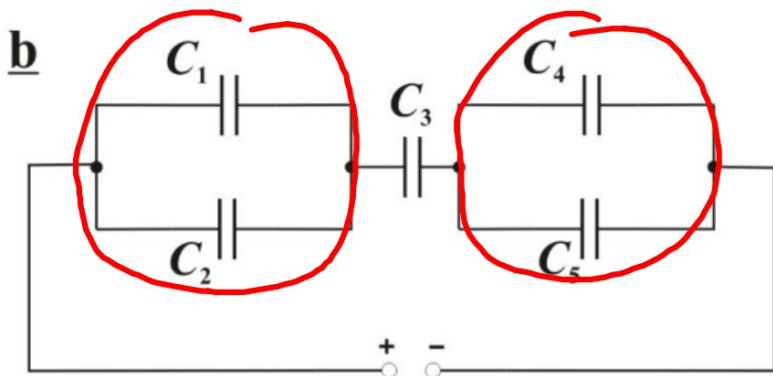
$$C_3 = 6$$

$$\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}$$

$$\frac{1}{C} = \frac{1}{2} + \frac{1}{3} + \frac{1}{12} = \frac{6+4+1}{12} = \frac{11}{12}$$

$$C = \frac{12}{11}$$

$$C = \frac{C_1 C_2 C_3}{C_1 C_2 + C_2 C_3 + C_1 C_3}$$



$$C_1 = 2 \text{ pF}$$

$$C_2 = 3 \text{ pF}$$

$$C_3 = 10 \text{ pF}$$

$$C_4 = 1 \text{ pF}$$

$$C_5 = 4 \text{ pF}$$

$$C_{12} = C_1 + C_2 = 2 + 3 = 5$$

$$C_{45} = C_4 + C_5 = 1 + 4 = 5$$

$$\frac{1}{C} = \frac{1}{C_{12}} + \frac{1}{C_3} + \frac{1}{C_{45}} = \frac{1}{5} + \frac{1}{10} + \frac{1}{5} = \frac{5}{10}$$

$$C = 2 \text{ pF}$$