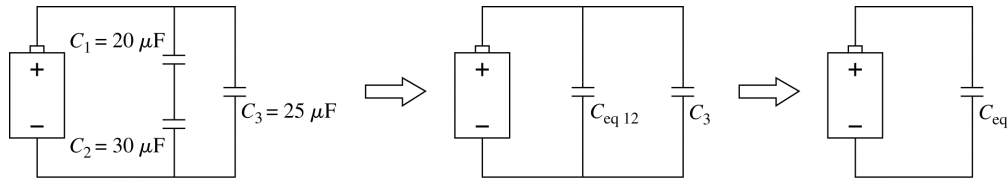


30.61. Visualize:



The pictorial representation shows how to find the equivalent capacitance of the three capacitors shown in the figure.

Solve: Because C_1 and C_2 are in series, their equivalent capacitance $C_{\text{eq } 12}$ is

$$\frac{1}{C_{\text{eq } 12}} = \frac{1}{C_1} + \frac{1}{C_2} = \frac{1}{20 \mu\text{F}} + \frac{1}{30 \mu\text{F}} = \frac{1}{12 \mu\text{F}} \Rightarrow C_{\text{eq } 12} = 12 \mu\text{F}$$

Then, $C_{\text{eq } 12}$ and C_3 are in parallel. So,

$$C_{\text{eq}} = C_{\text{eq } 12} + C_3 = 12 \mu\text{F} + 25 \mu\text{F} = 37 \mu\text{F}$$