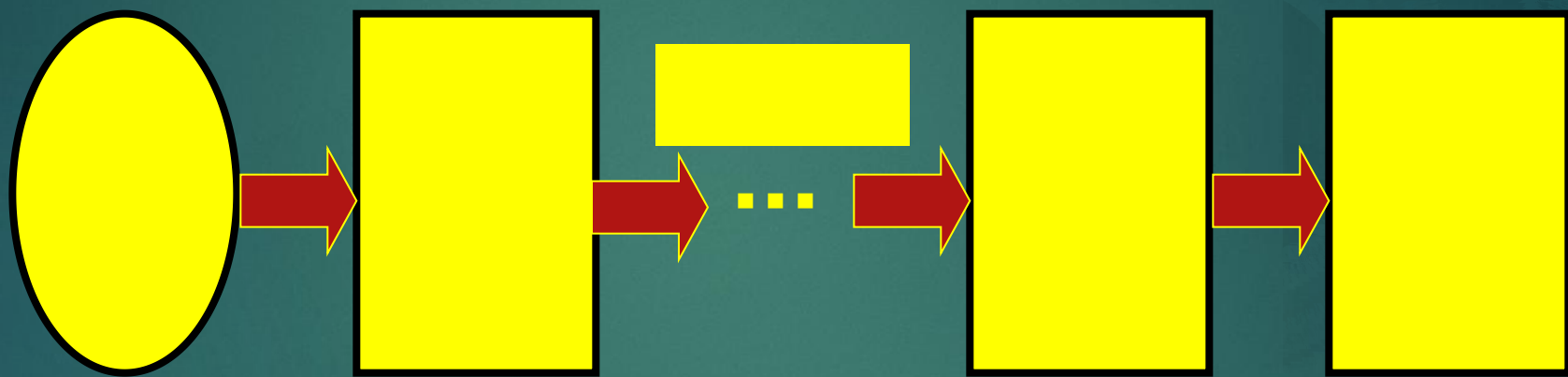
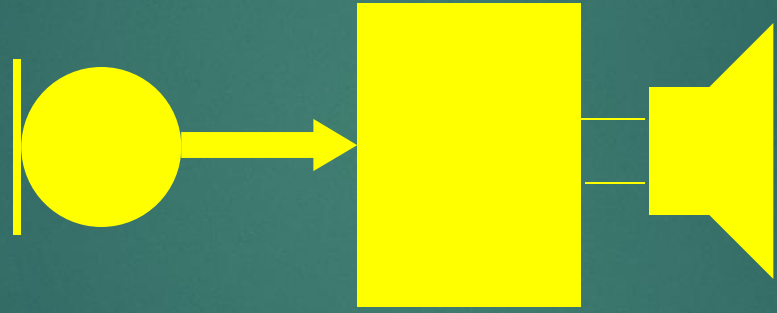




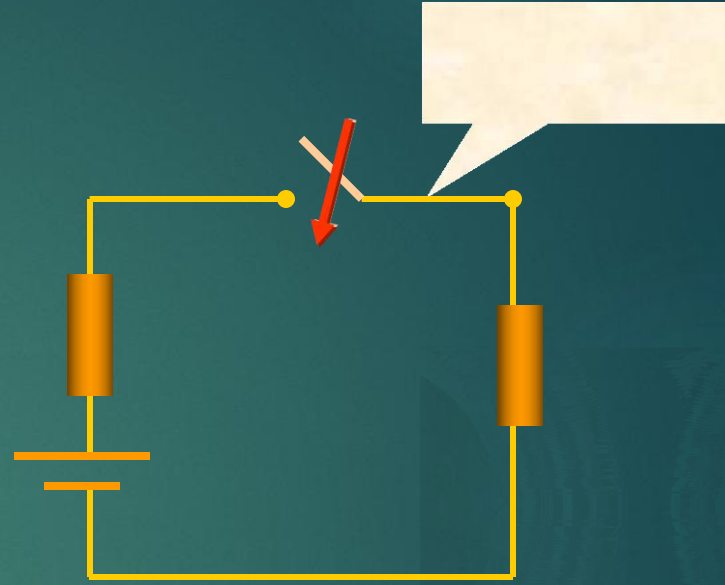
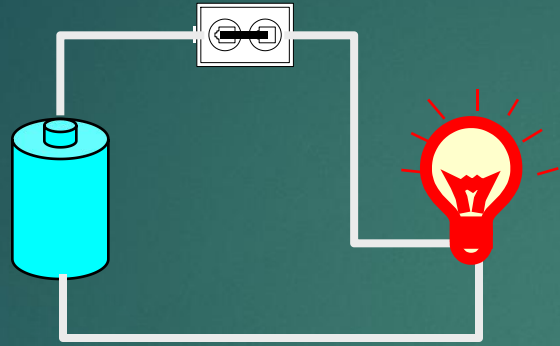
1. 实际电路 →















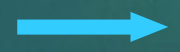




$$i(t) = \lim_{\Delta t \rightarrow 0} \frac{\Delta a_t}{\Delta t} = \frac{da_t}{dt}$$

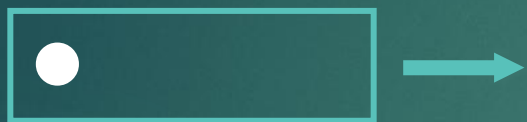






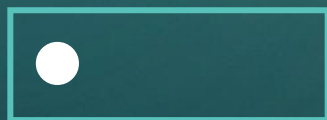


# 电压的参考方向



$\varphi$

$$U \stackrel{\text{def}}{=} \frac{dW}{dq}$$



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、 $\mu$

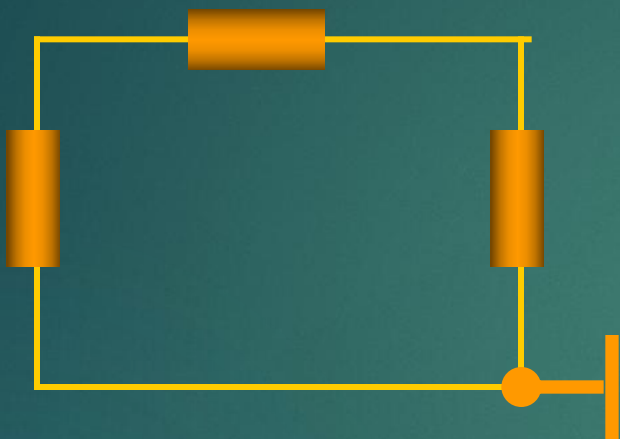






$$\varphi =$$

$$\varphi = \text{---} = \text{---}^+ \text{---} =$$

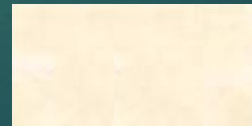
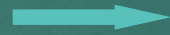


$$\varphi = \text{---} = \text{---} =$$

$$= \varphi - \varphi = - =$$

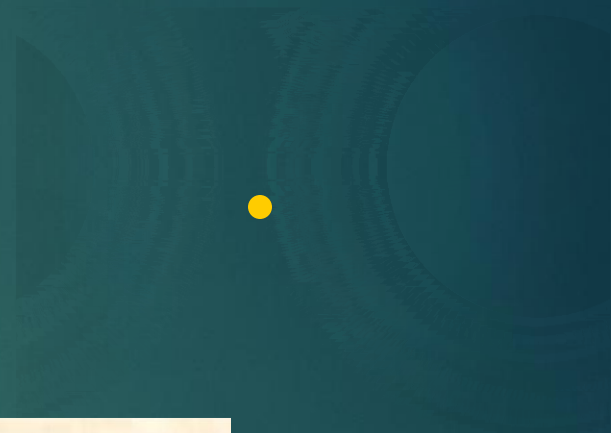
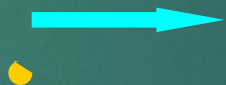
$$= \varphi - \varphi = - =$$



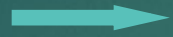




关联参考方向







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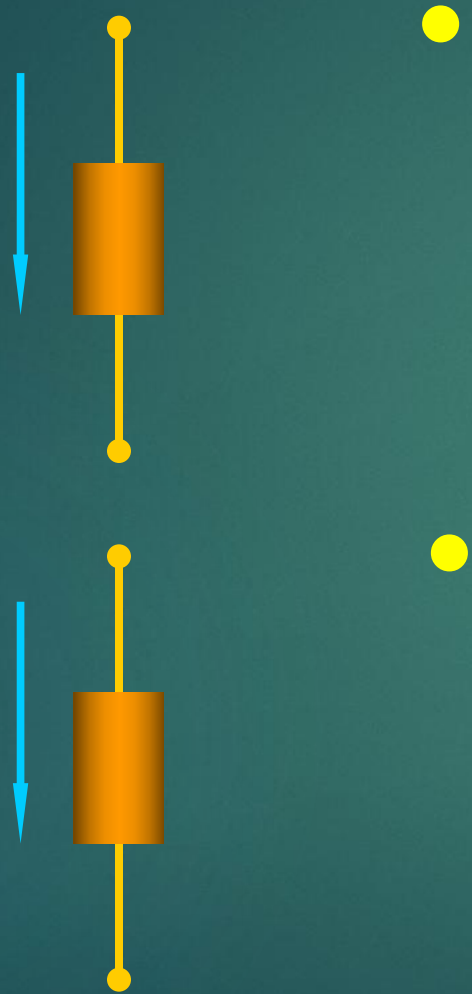
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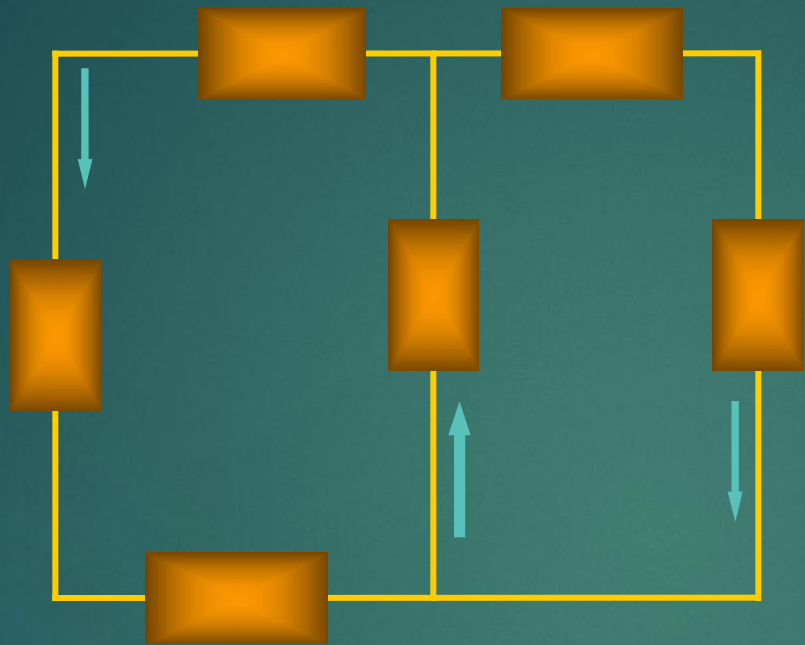
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# 电路吸收或发出功率的判断





已知：

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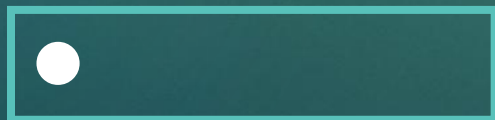
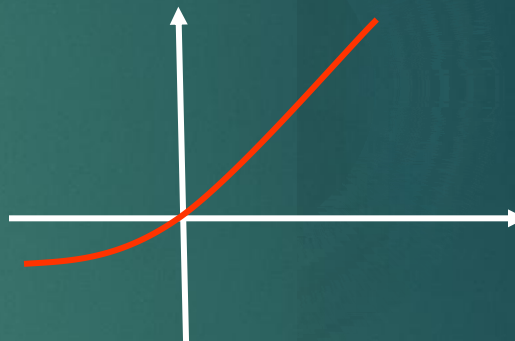
# 1. 电路元件 →



# 1. 定义



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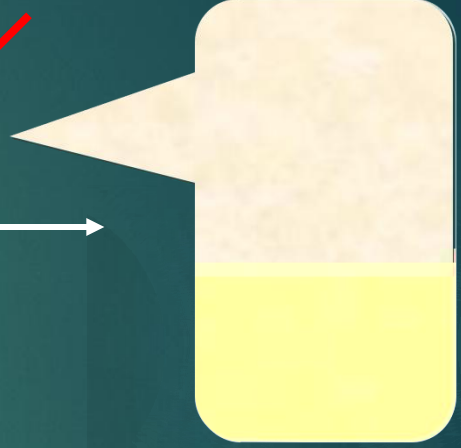
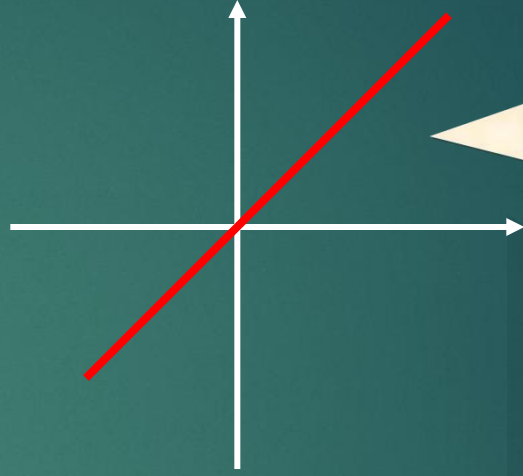
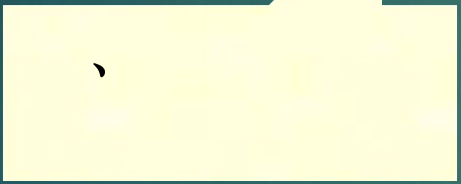


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## 4. 电阻的开路与短路



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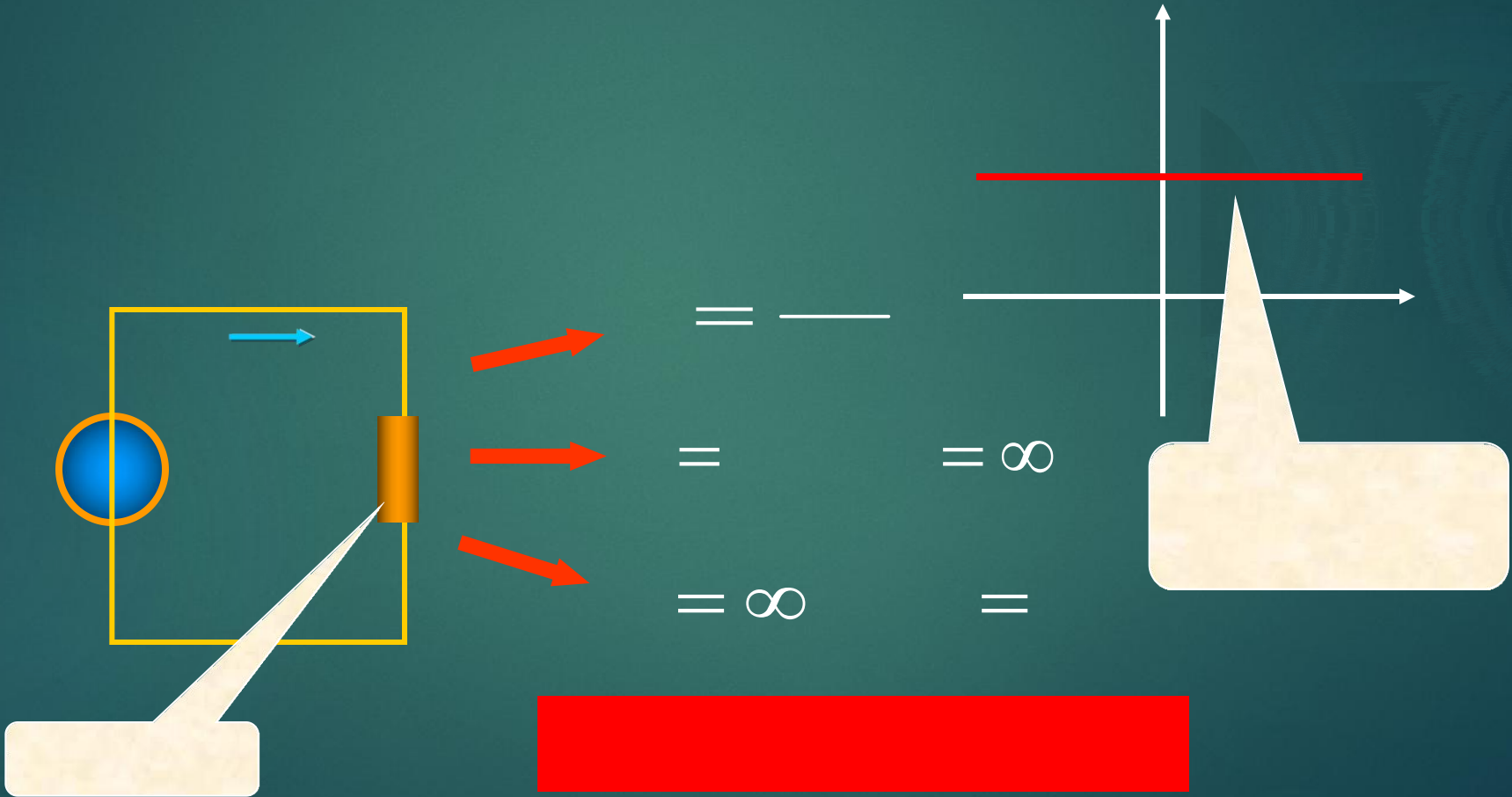
$$\neq \quad =$$

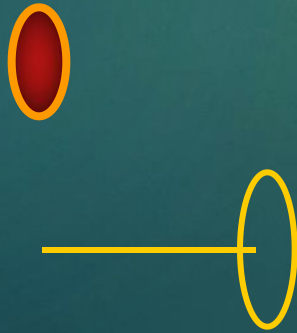
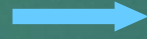
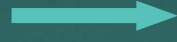
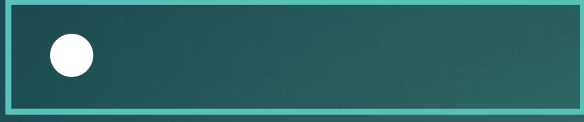
$$\rightarrow = \quad = \infty$$













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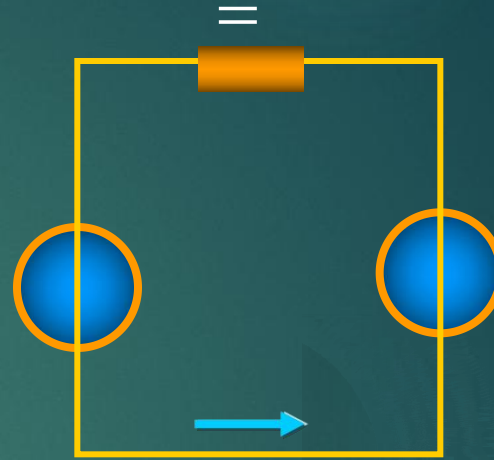
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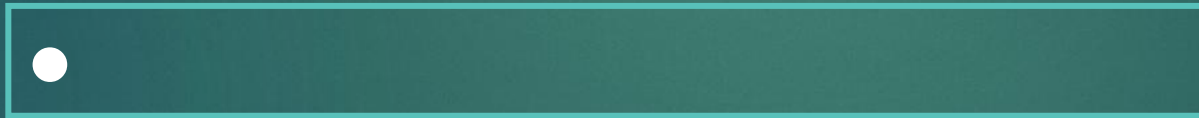
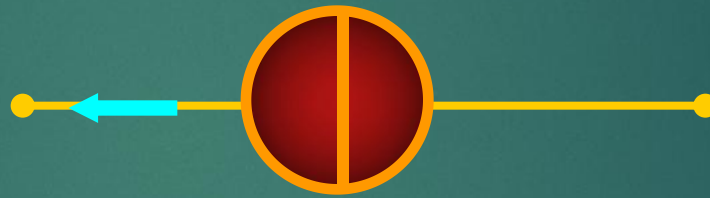
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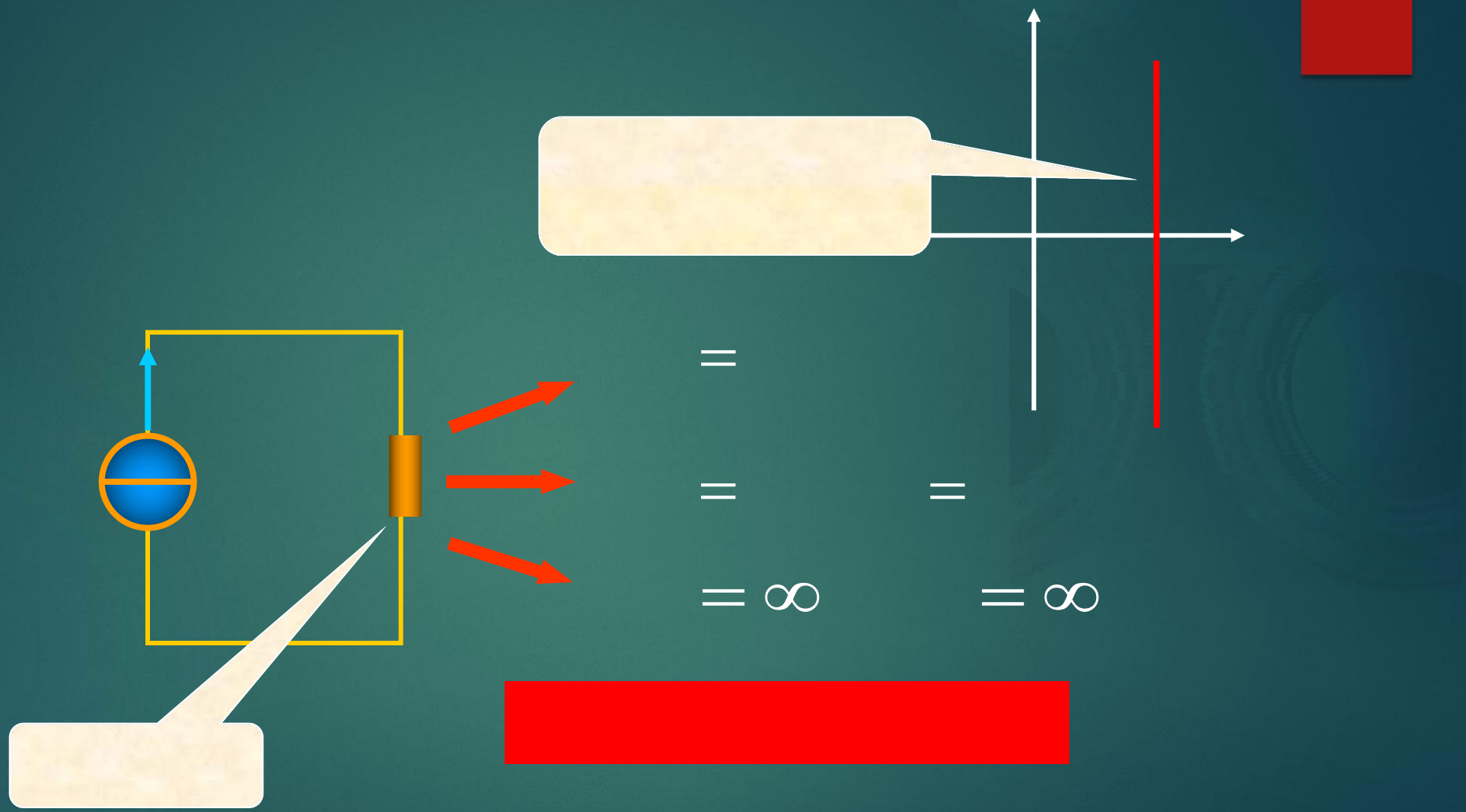
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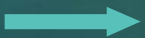
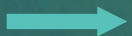
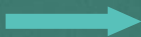
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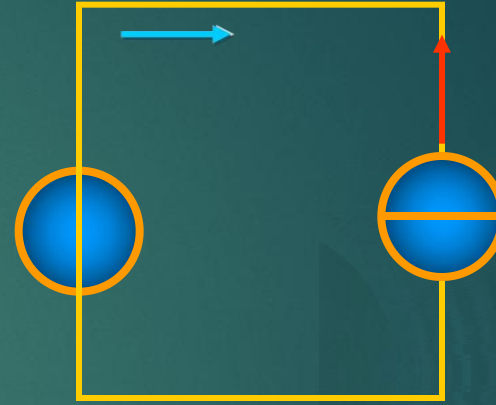
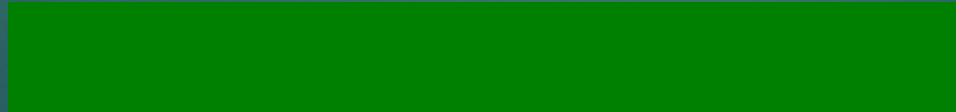


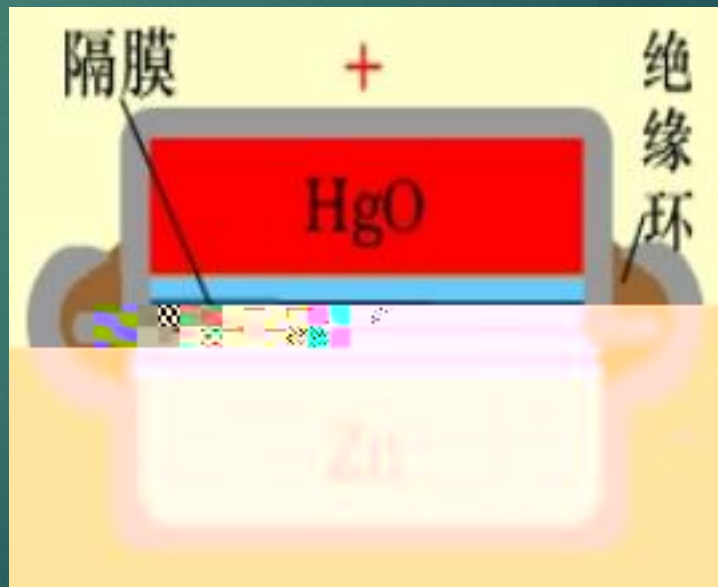
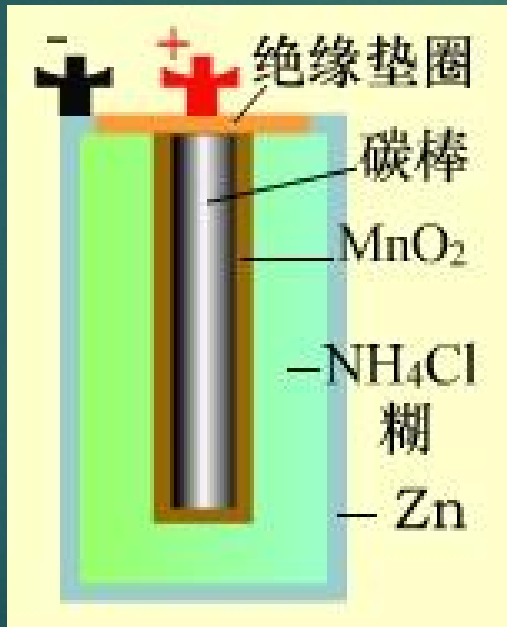
$$= - \quad = -$$

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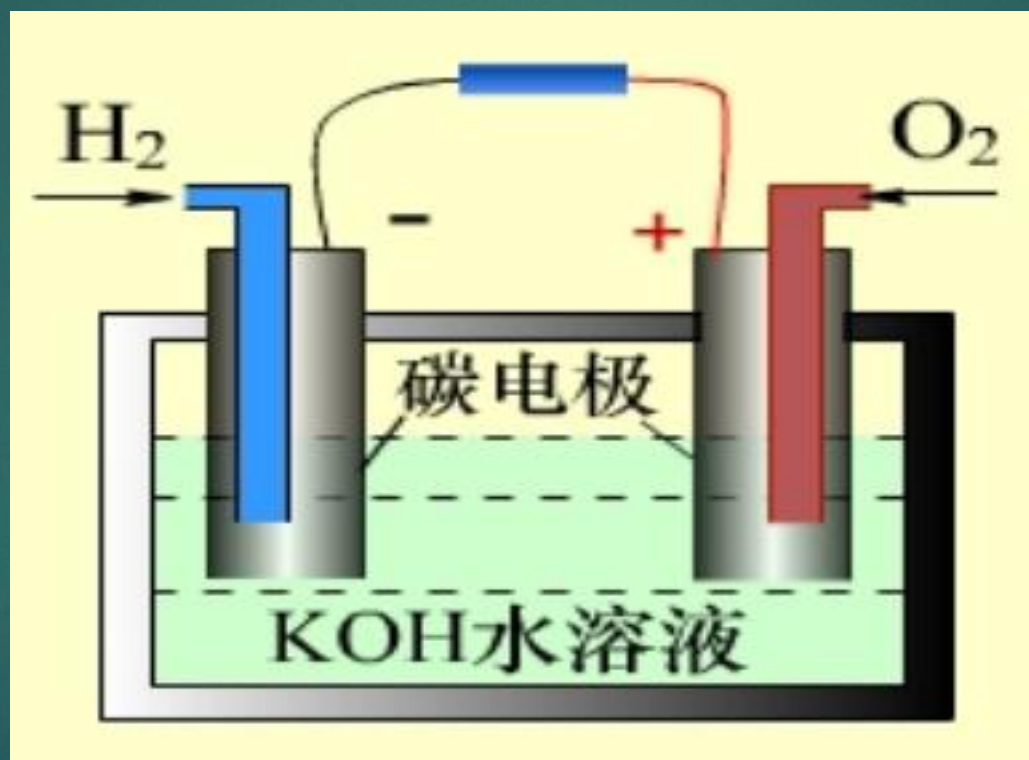
$$= \quad = \times \quad =$$

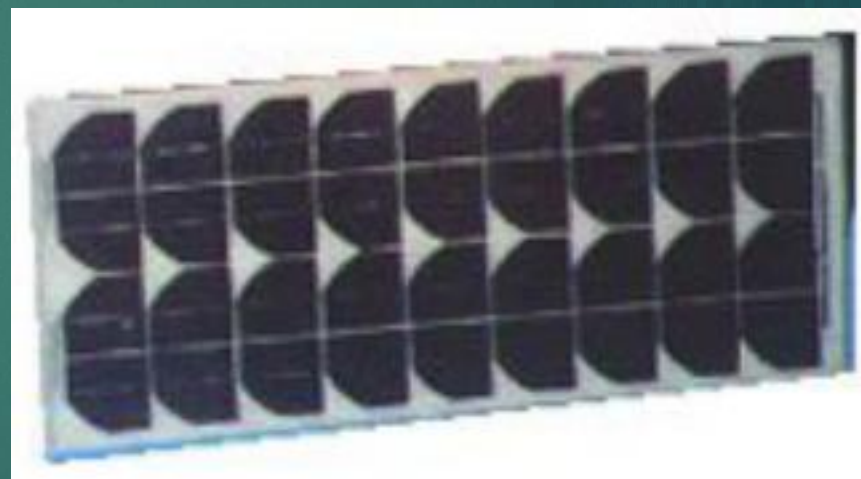
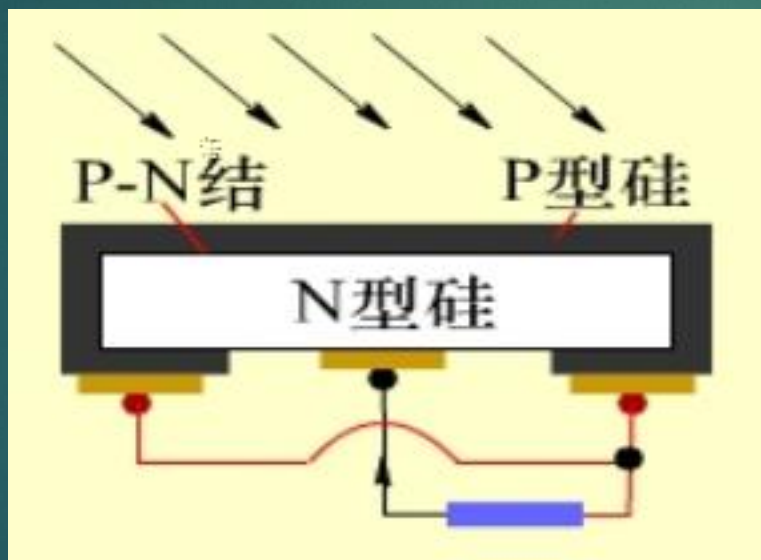
$$= \quad = \times - \quad = -$$

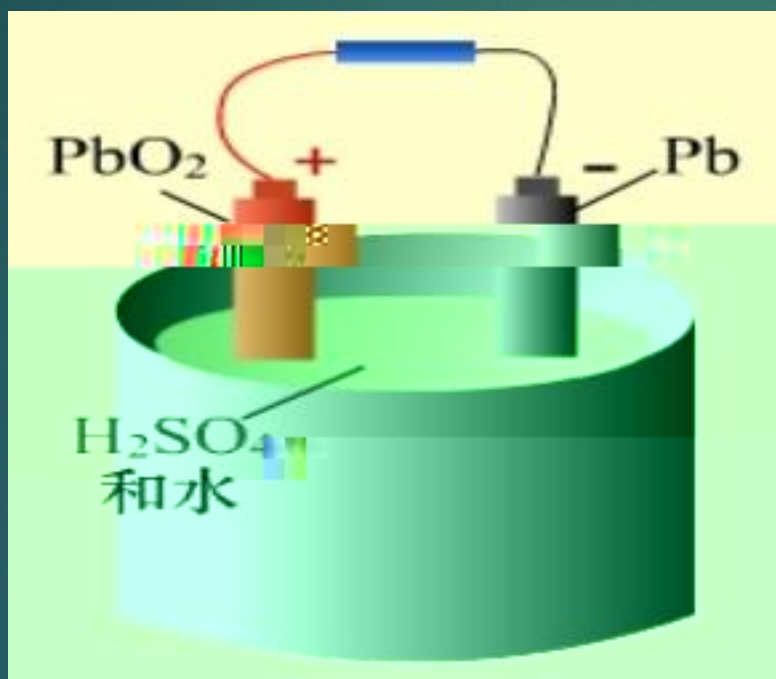


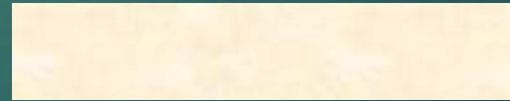
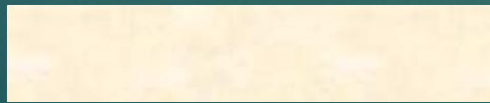
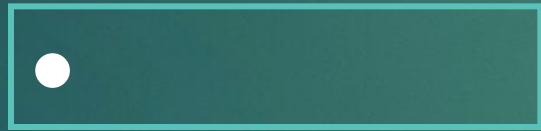
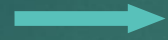


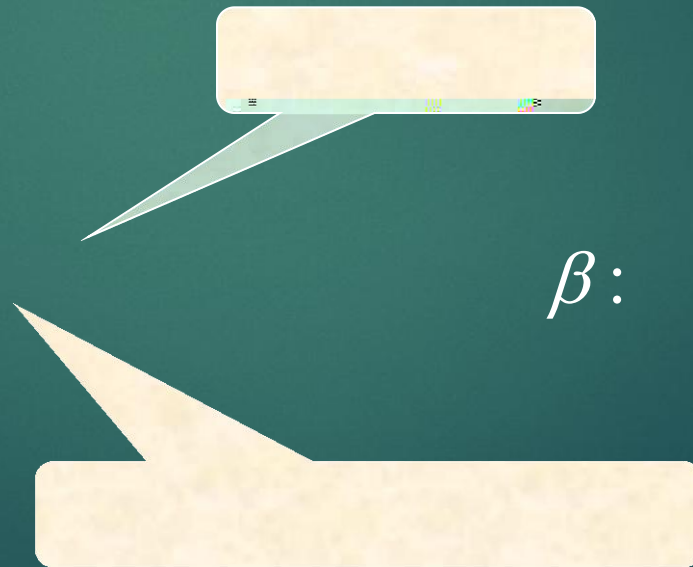








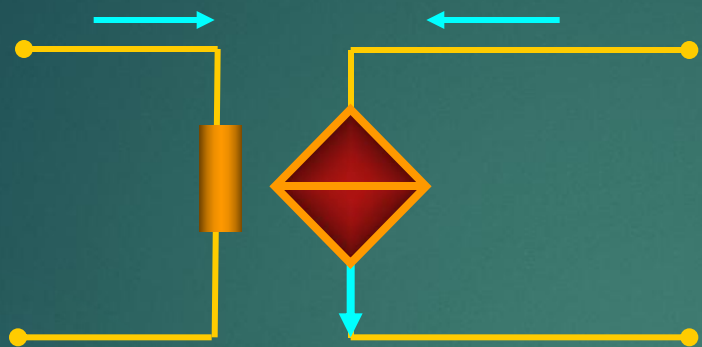




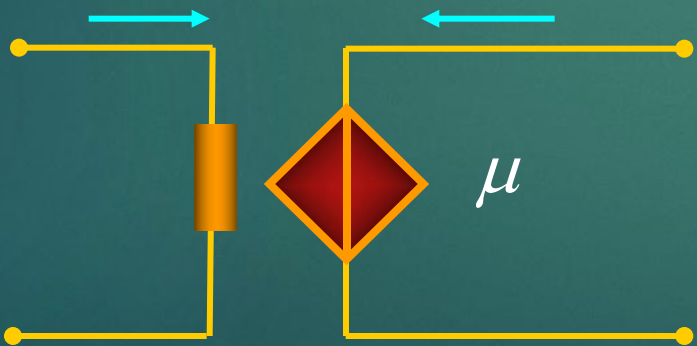
$$= \beta$$

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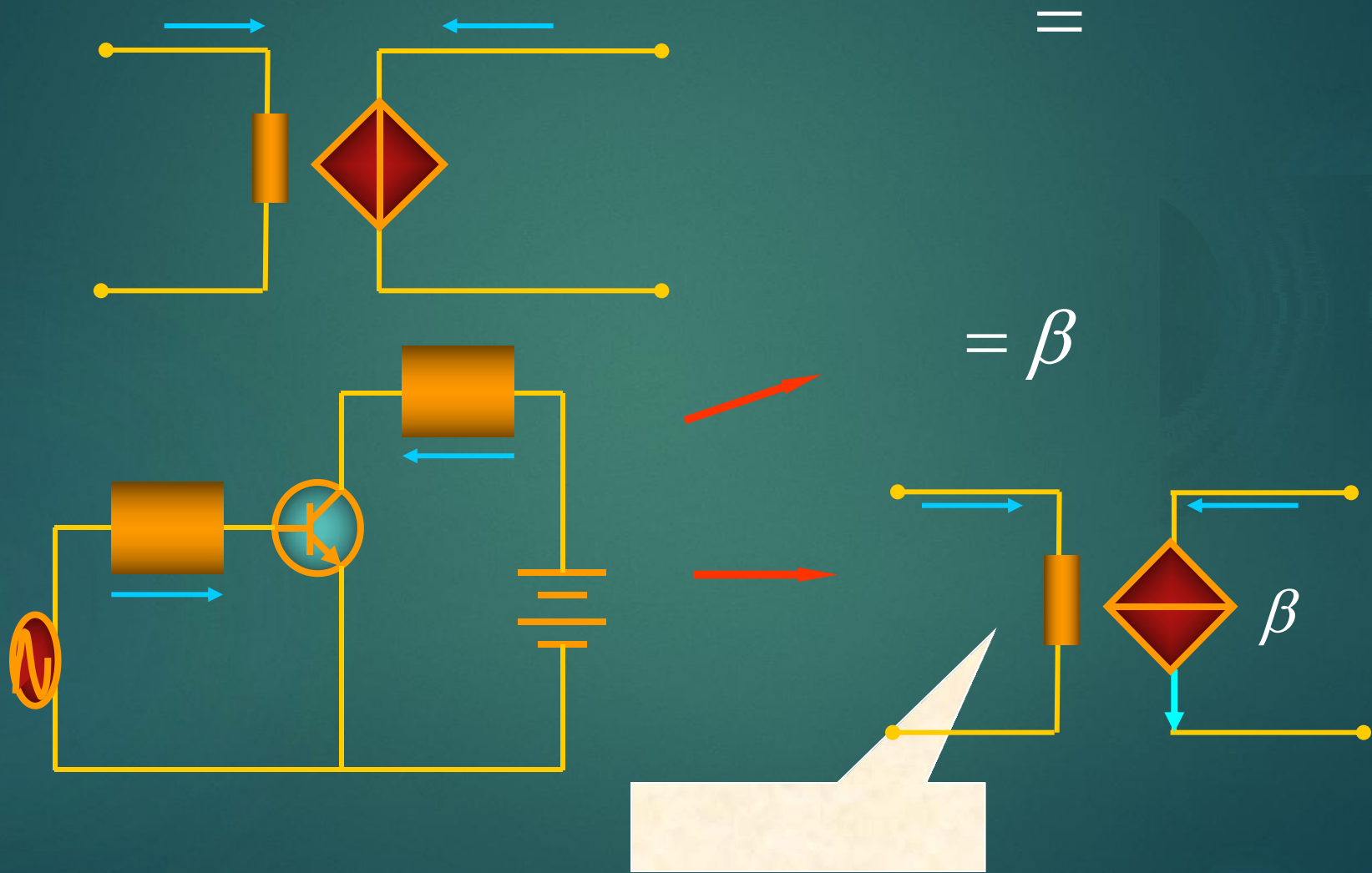


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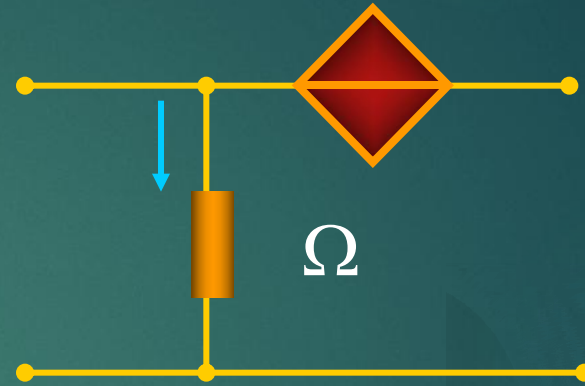




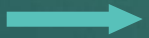
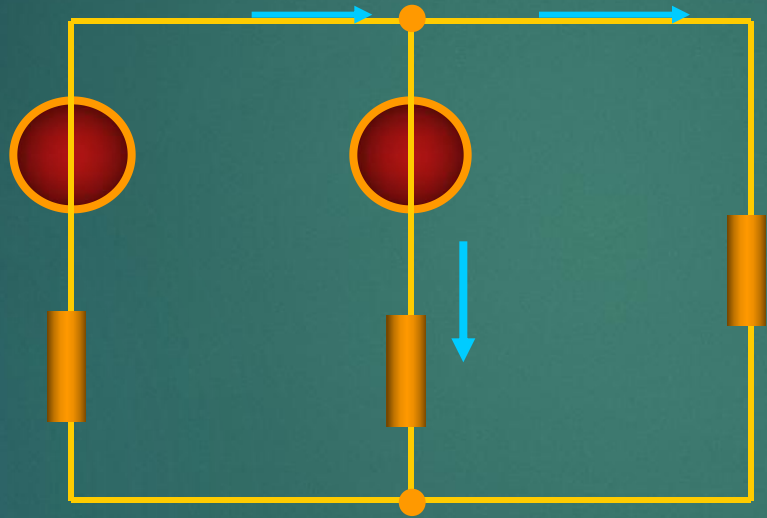
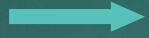
$$= \text{---} =$$

$$= \text{---} +$$

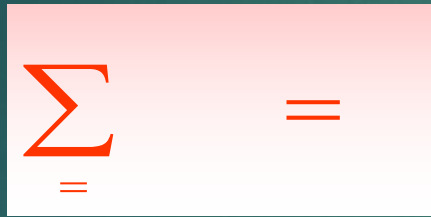
$$= \text{---} + = \text{---}$$





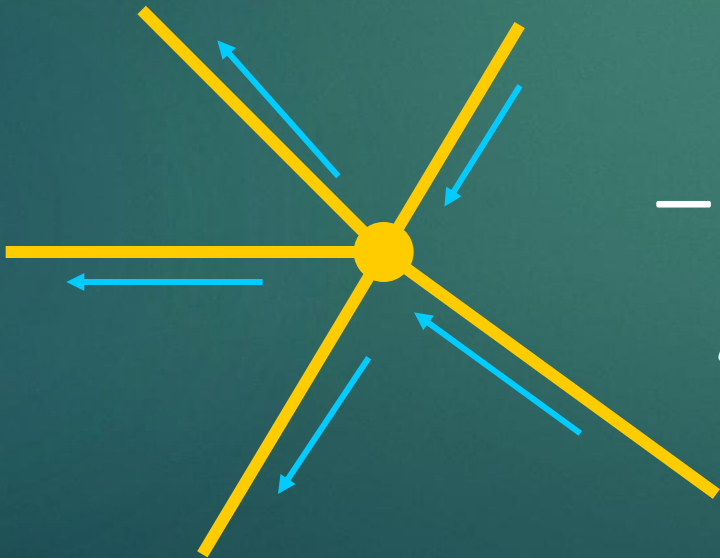






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$$\begin{aligned}
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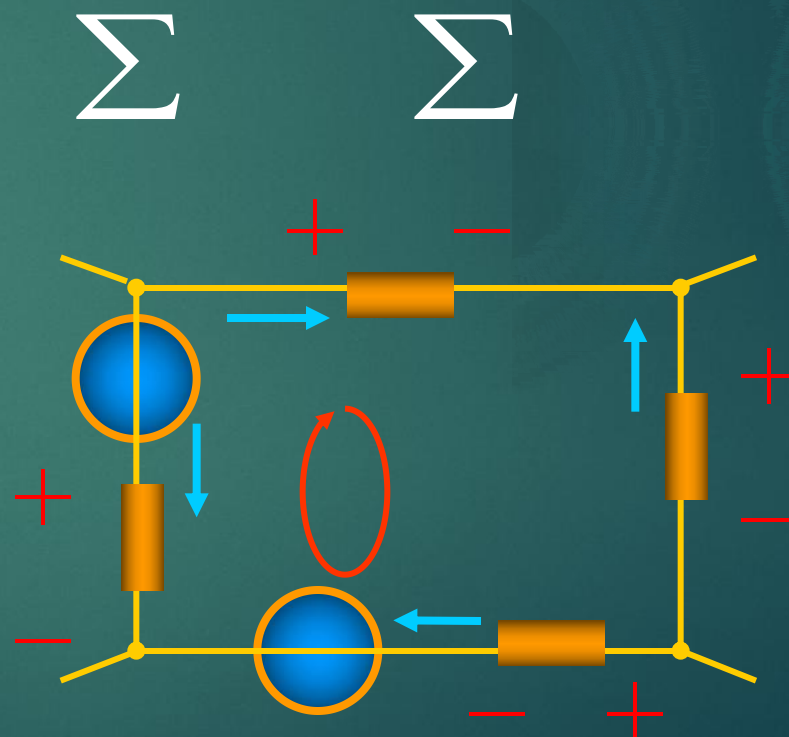




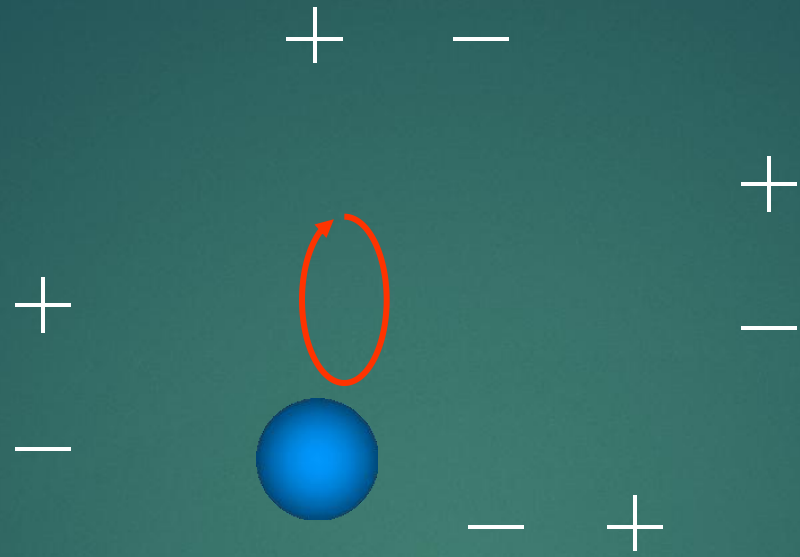


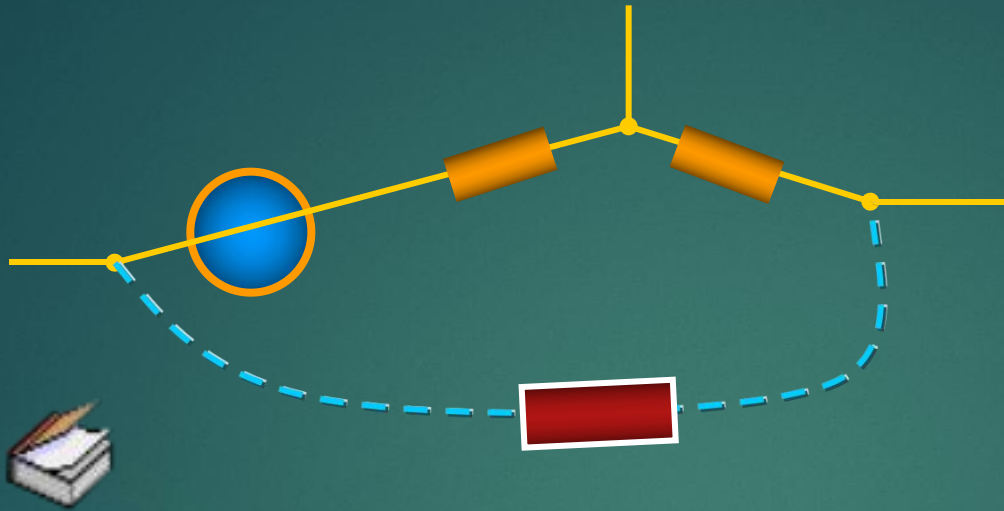
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$$\sum_{=} =$$









$$= + +$$

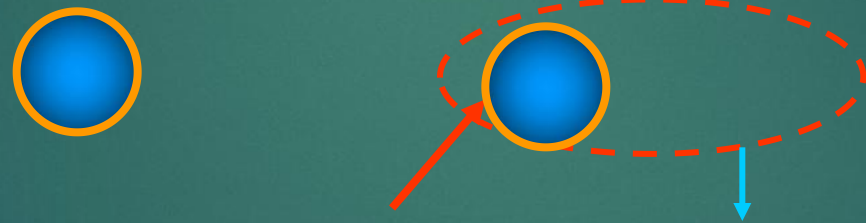
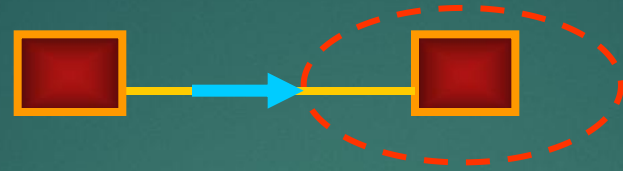


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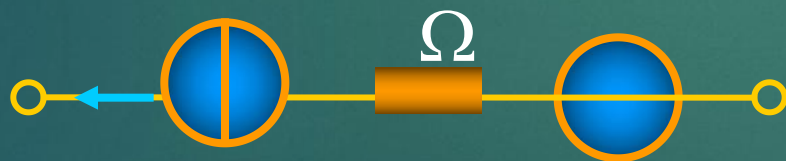
例



$$- = \Rightarrow =$$



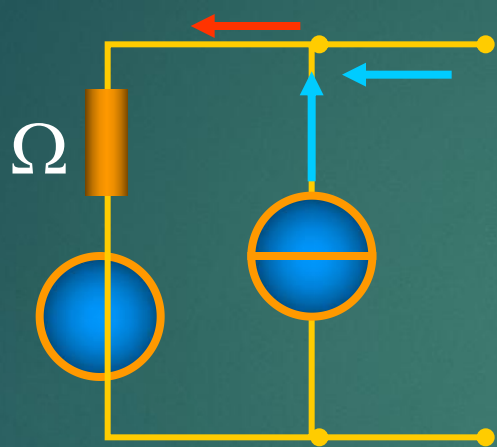
例



$$= + =$$



例



$$+ \quad - \quad - \quad =$$

$$= -$$

$$= \quad - \quad = \quad - \quad - \quad = \quad -$$

例



$$= \quad - \quad =$$

$$+ \quad - \quad =$$

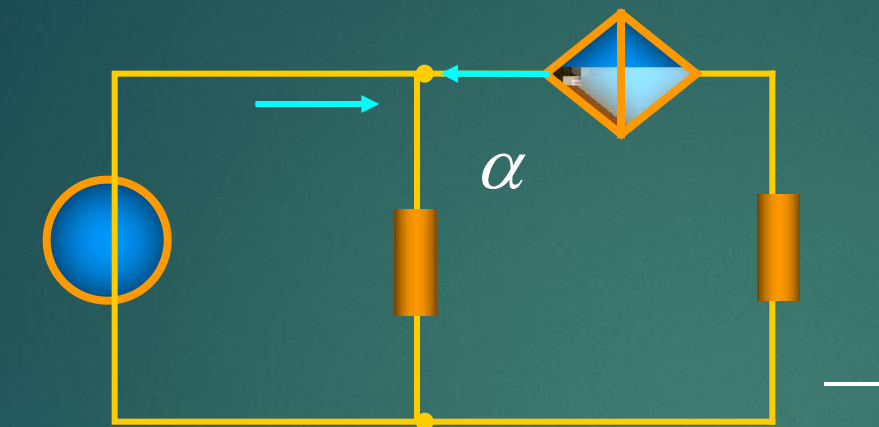
$$= \quad - \quad = \quad - \quad =$$







例



$\Rightarrow = - \frac{\alpha}{+ \alpha}$



$= - \alpha$

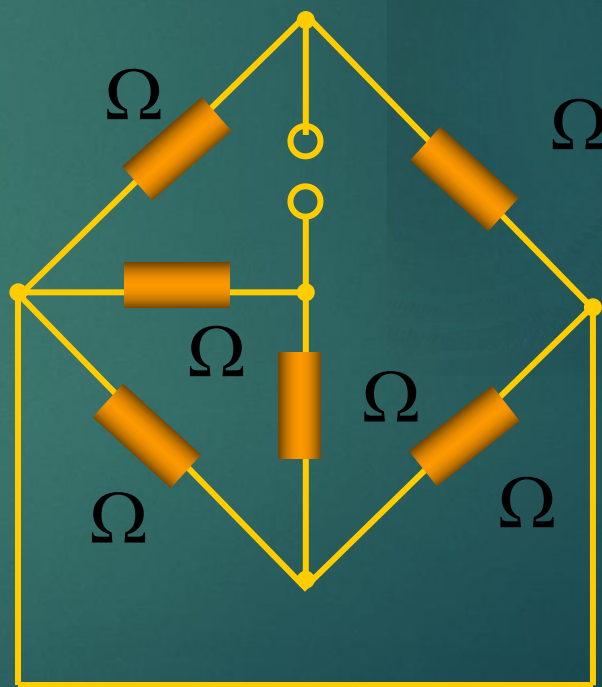
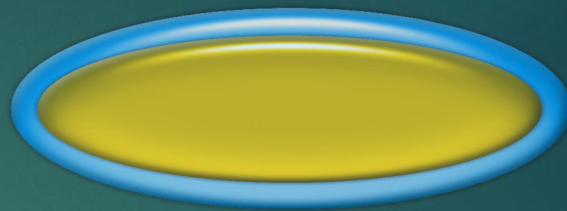
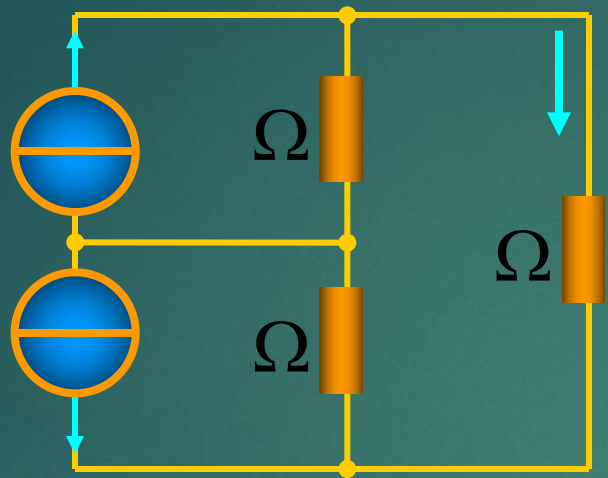
$+ \alpha = /$

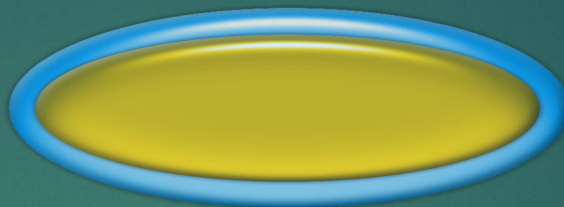


$= \frac{\quad}{+ \alpha}$



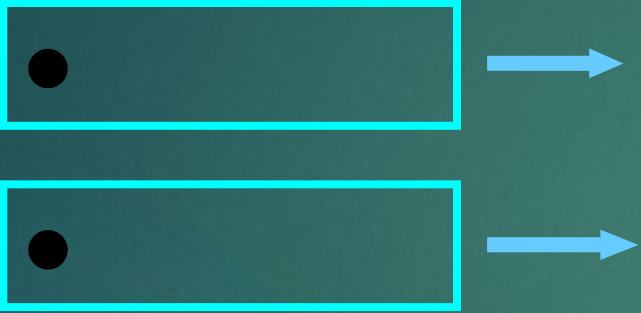


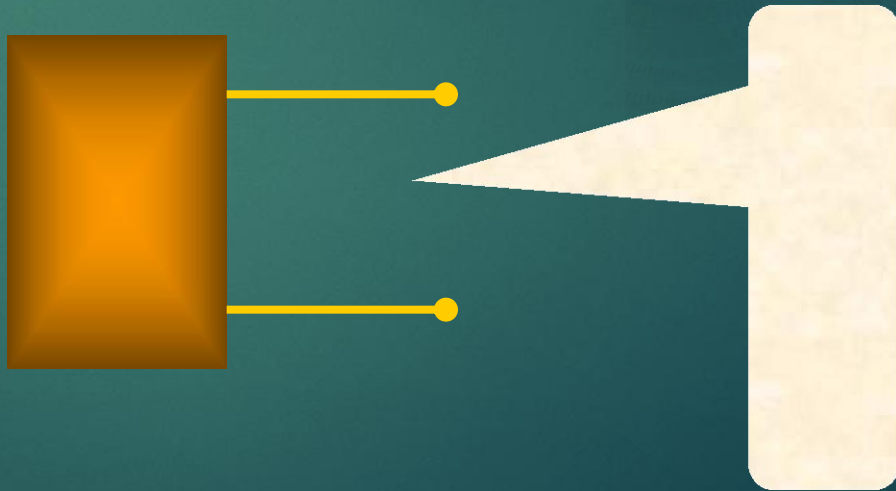
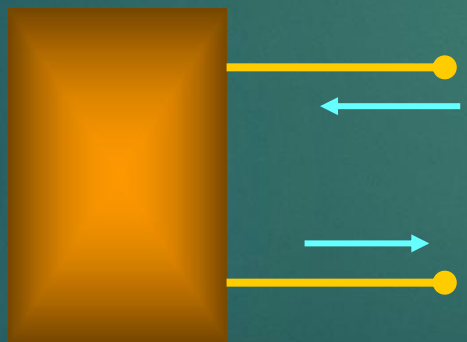


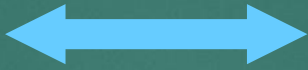
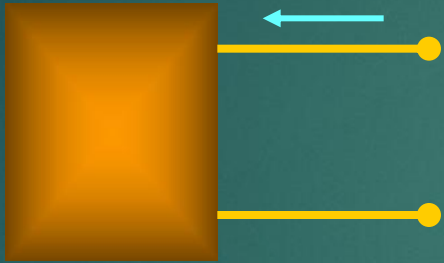


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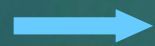
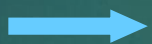












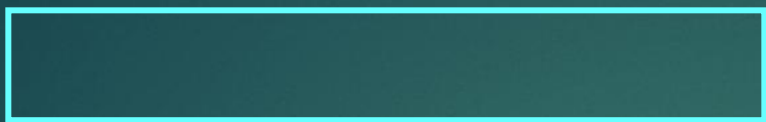


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$$= + \dots + + \dots +$$





$$= = \text{---} = \text{---} <$$

 表明

$$= \frac{\text{---}}{+}$$

$$= \frac{\text{---}}{+}$$





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# 结论

$$\frac{1}{n} = \frac{1}{n} = \frac{1}{n} + \frac{1}{n} + \dots + \frac{1}{n}$$

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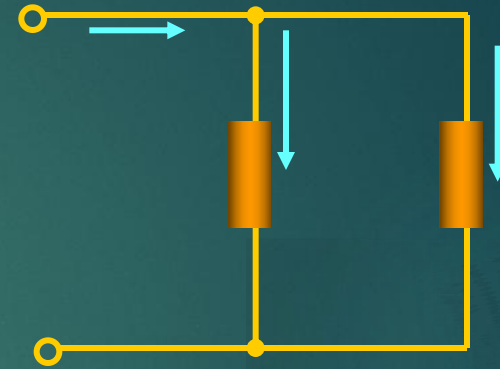
$$\frac{1}{n} = \frac{1}{n} = \frac{1}{n} \xrightarrow{\quad} \frac{1}{n}$$

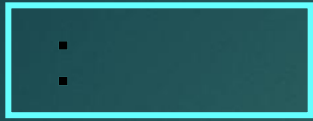


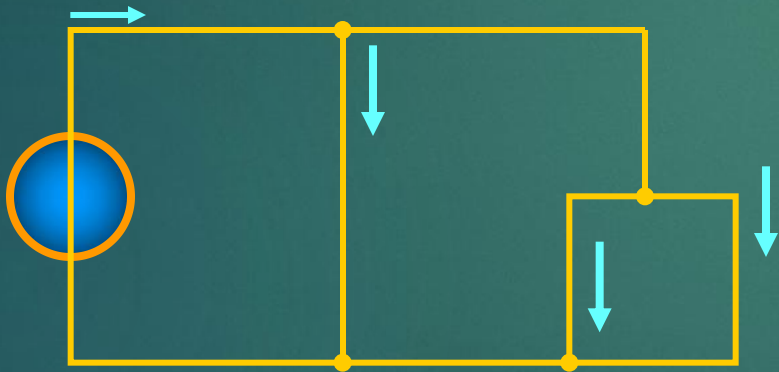
$$= \frac{\text{//} \cdot \text{//}}{\text{//} + \text{//}} = \text{—} +$$

$$= \frac{\text{//}}{\text{//} + \text{//}} = \text{—} +$$

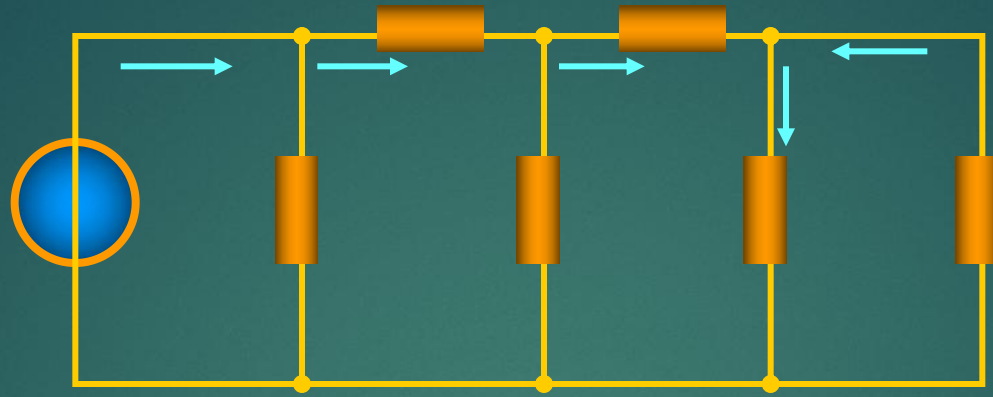
$$= \frac{\text{//}}{\text{//} + \text{//}} = \text{—} + = \text{—}$$







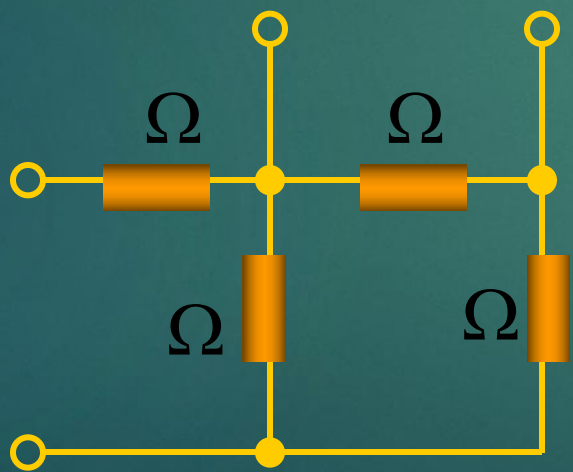




$\frac{1}{R_1} = \frac{1}{R_2} + \frac{1}{R_3} + \frac{1}{R_4} + \frac{1}{R_5}$

$\frac{1}{R_{eq}} = \frac{1}{R_1} \times \frac{1}{R_2} = \frac{1}{R_3}$

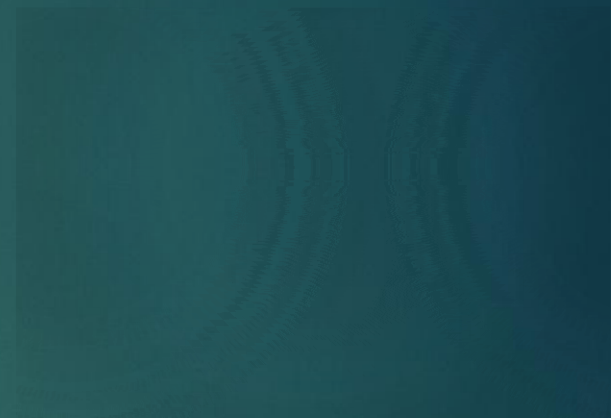
$\frac{1}{R_1} = \frac{1}{R_2} + \frac{1}{R_3} = \frac{1}{R_4}$

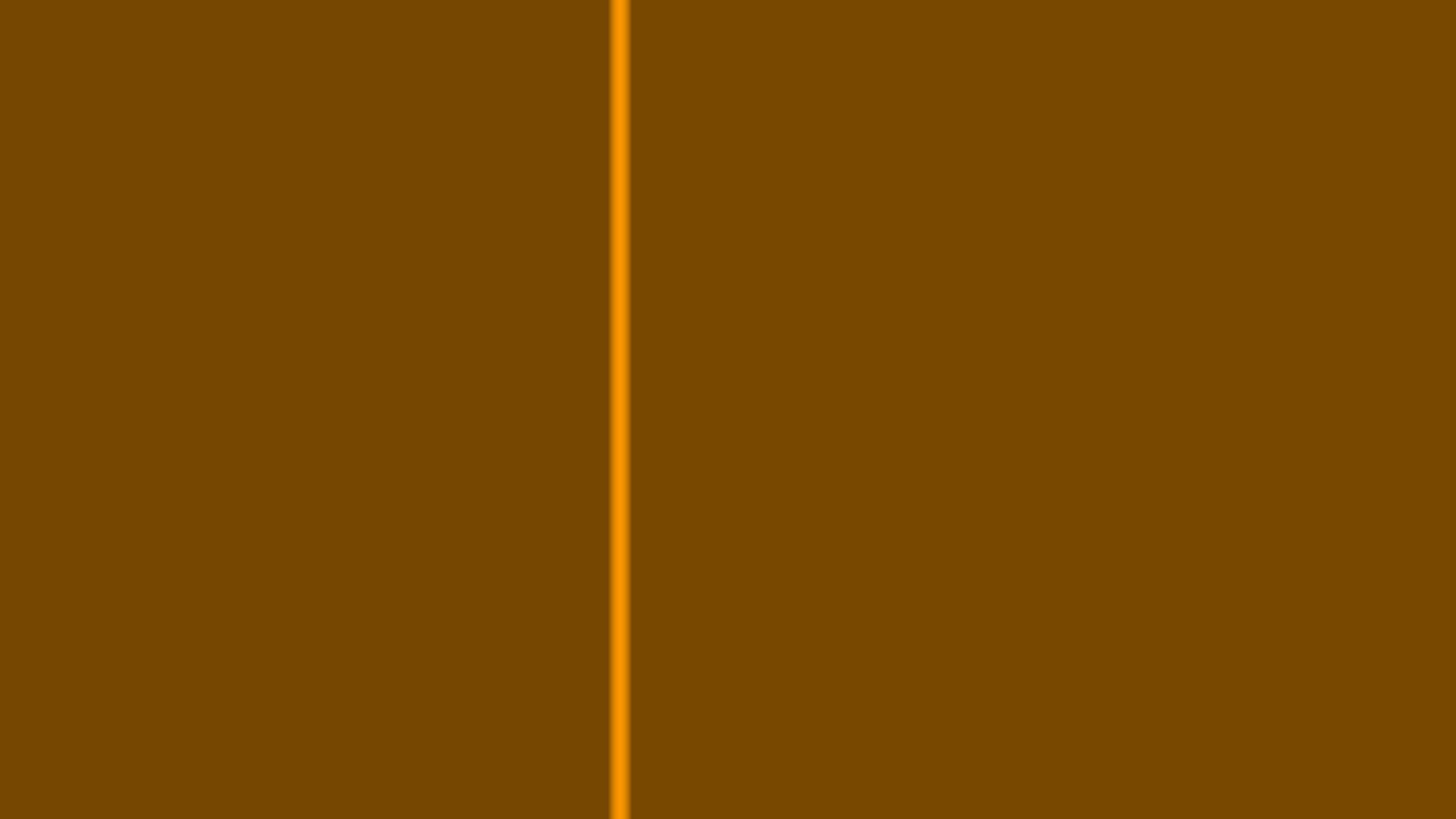


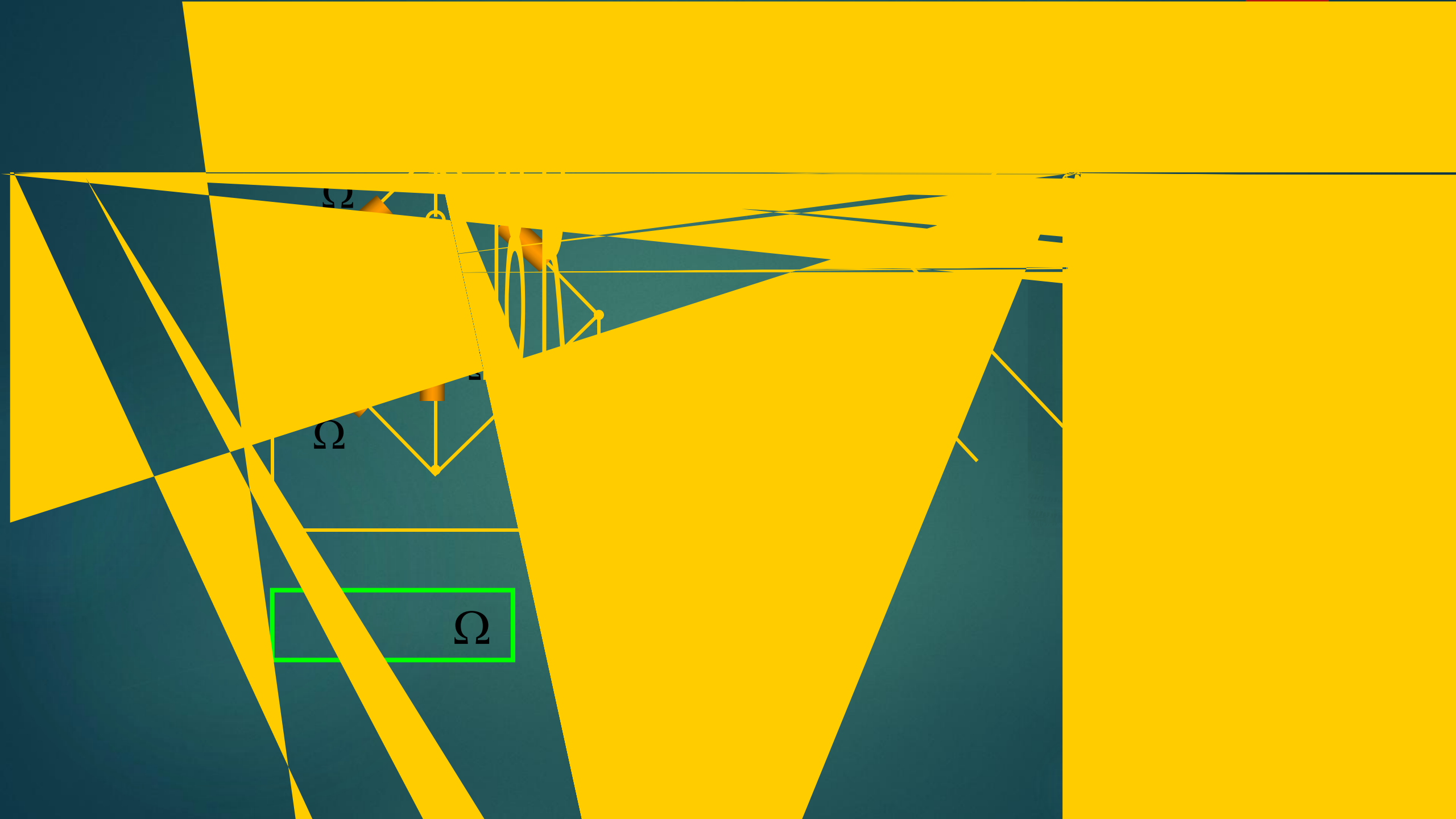
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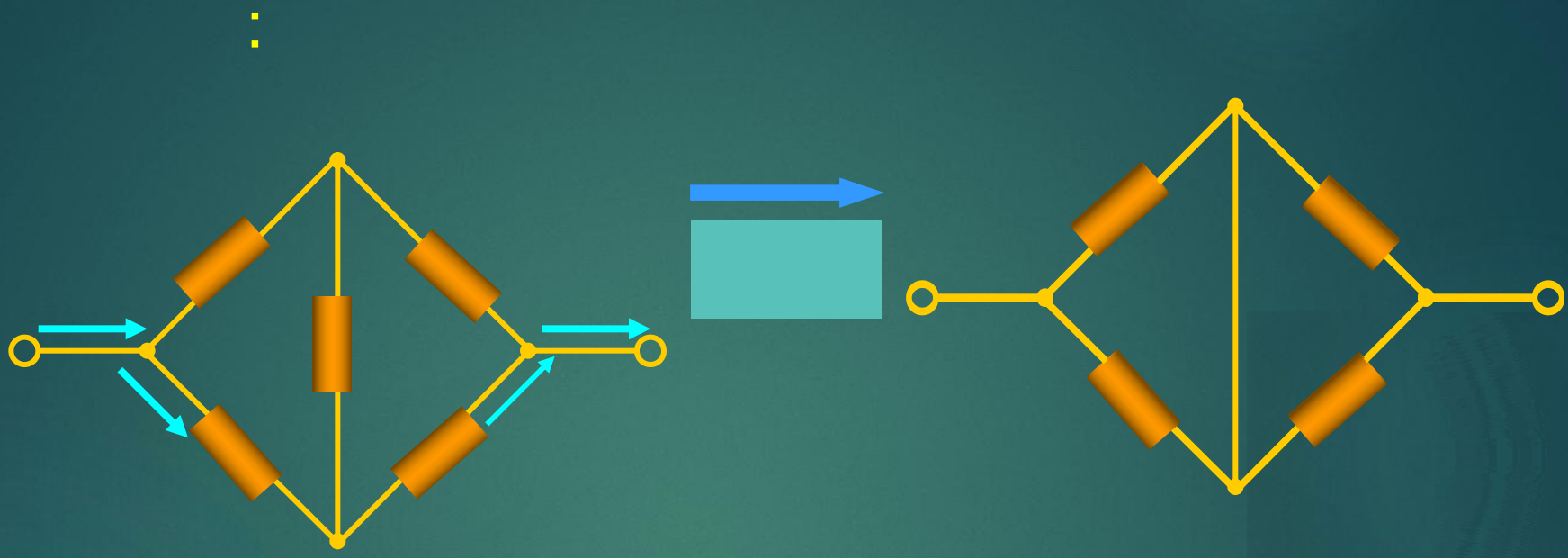
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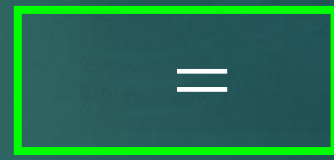








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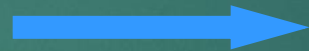
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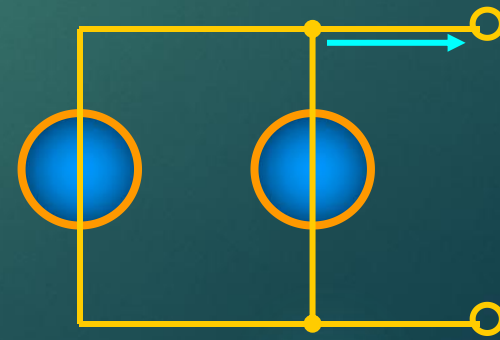
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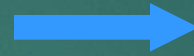


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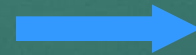
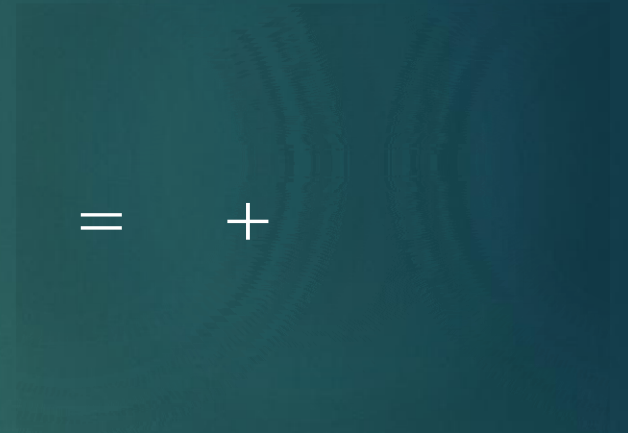
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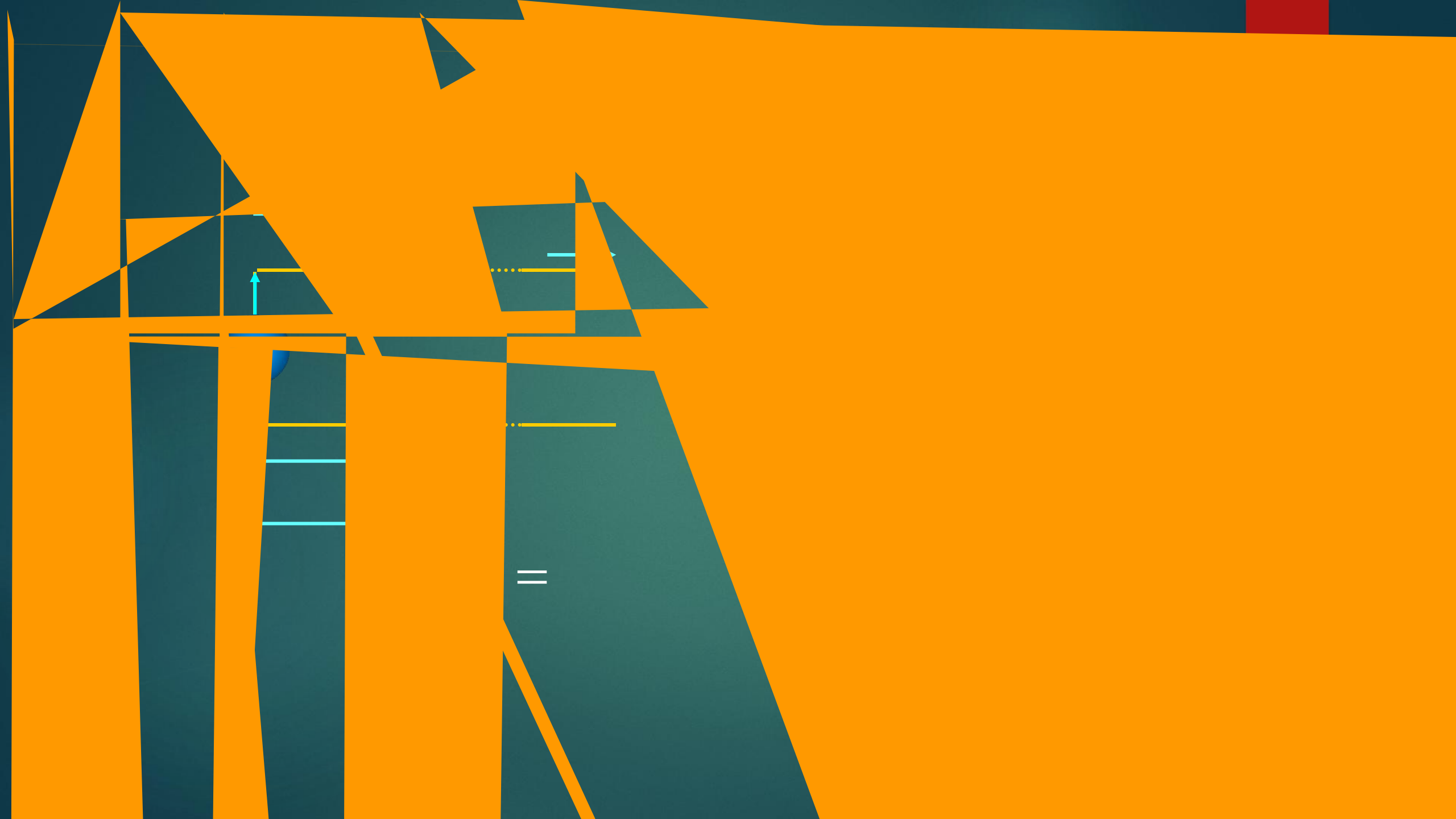


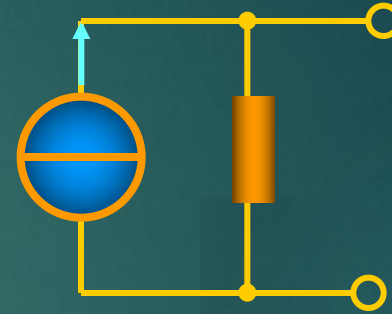
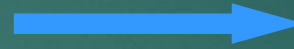
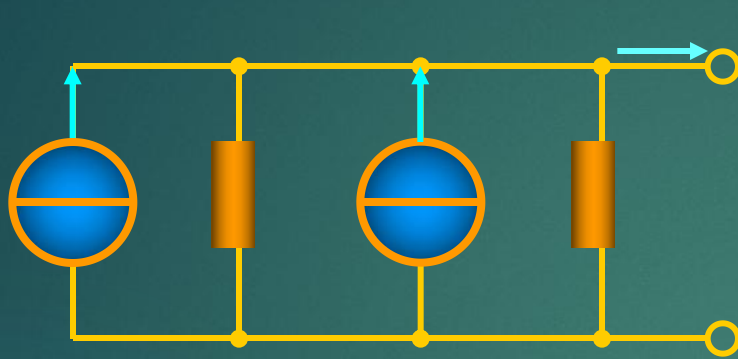
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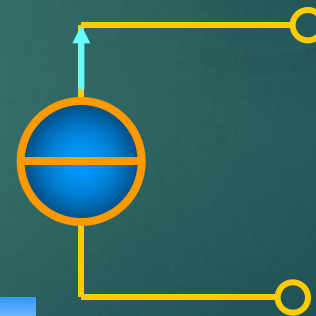
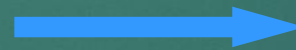
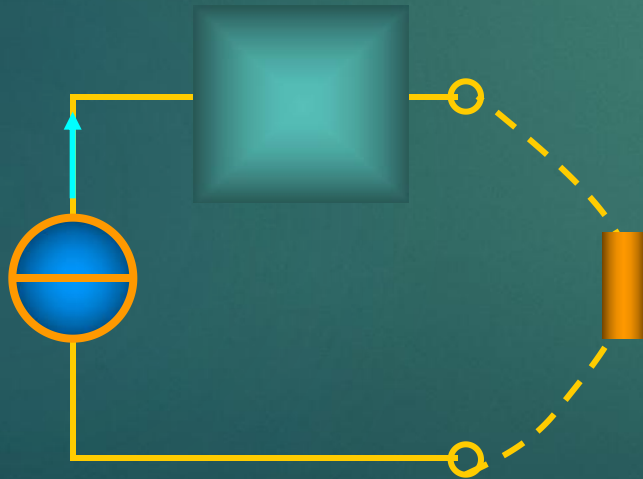
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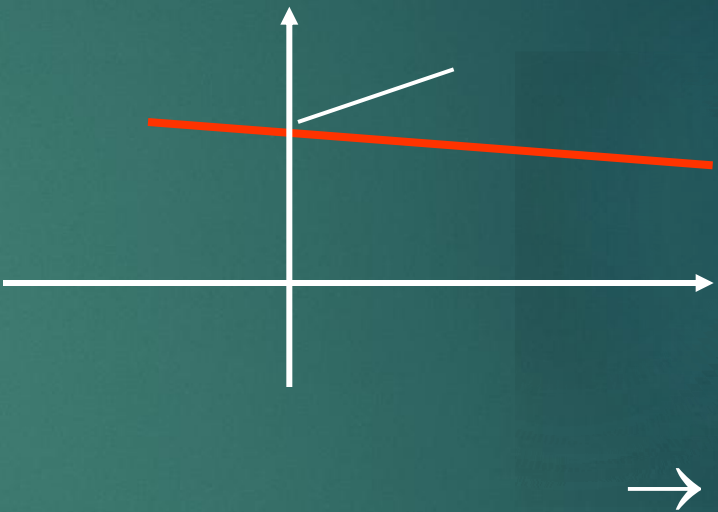
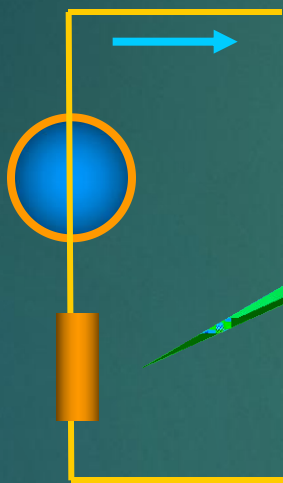




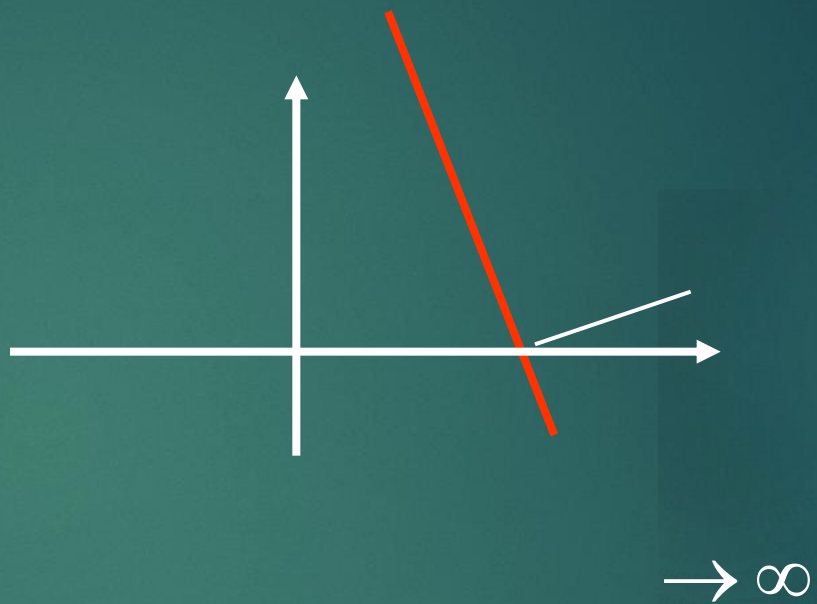
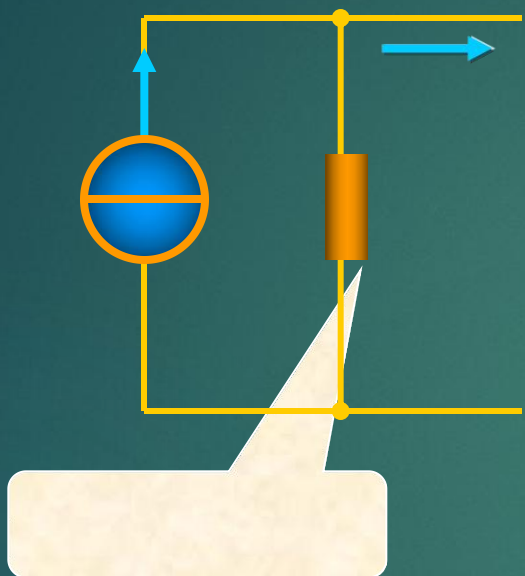


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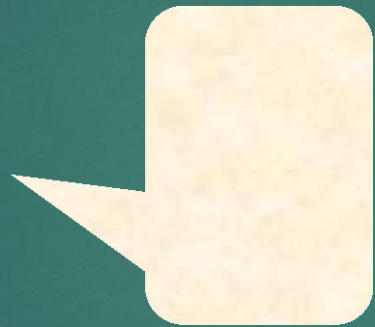




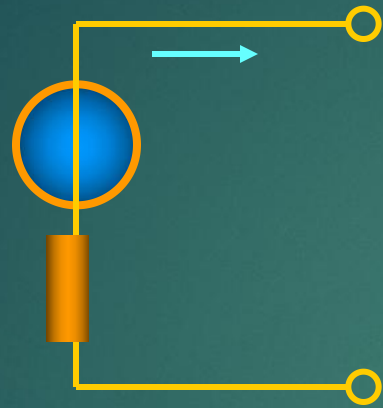
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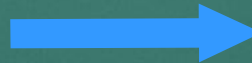
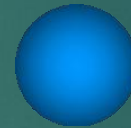
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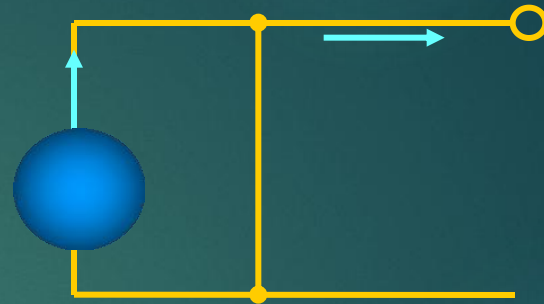


$$i_s = \frac{u_s}{R_s}, \quad G_s = \frac{1}{R_s}$$



$$u_s = \frac{i_s}{G_s}, \quad R_s = \frac{1}{G_s}$$

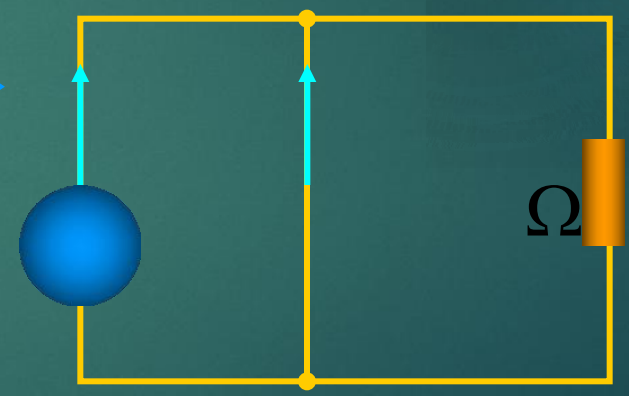
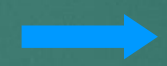
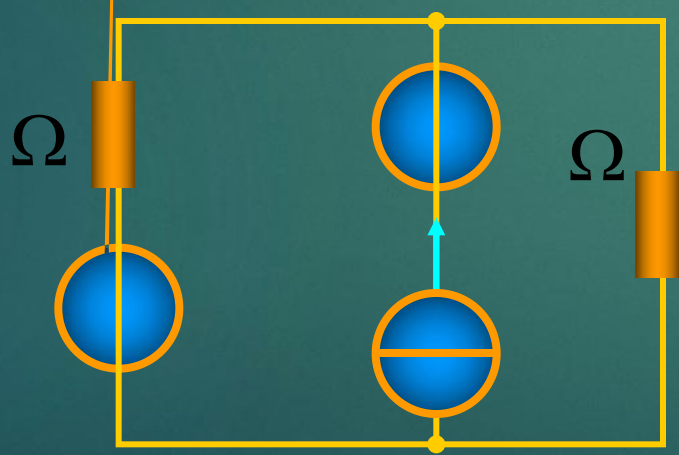
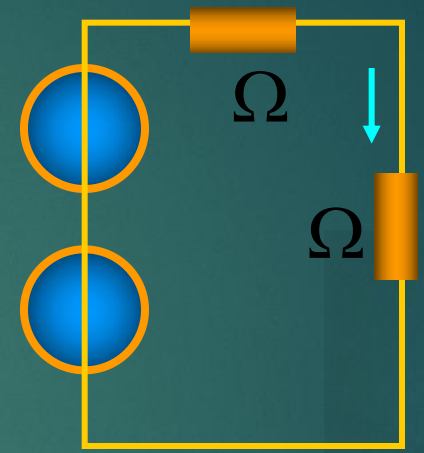
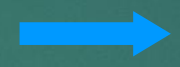
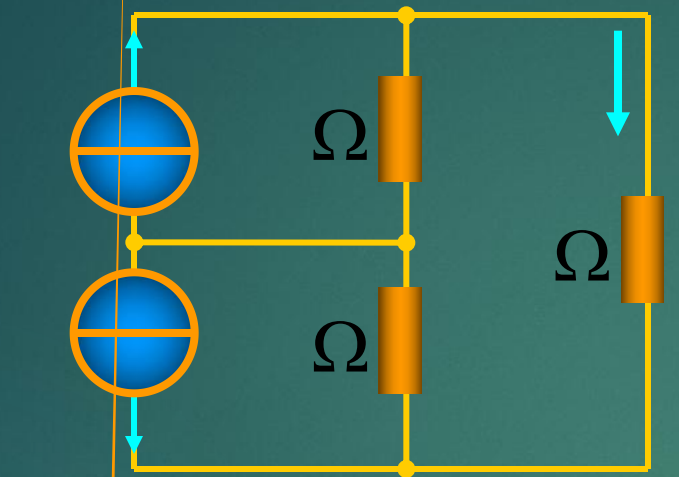
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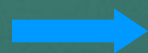
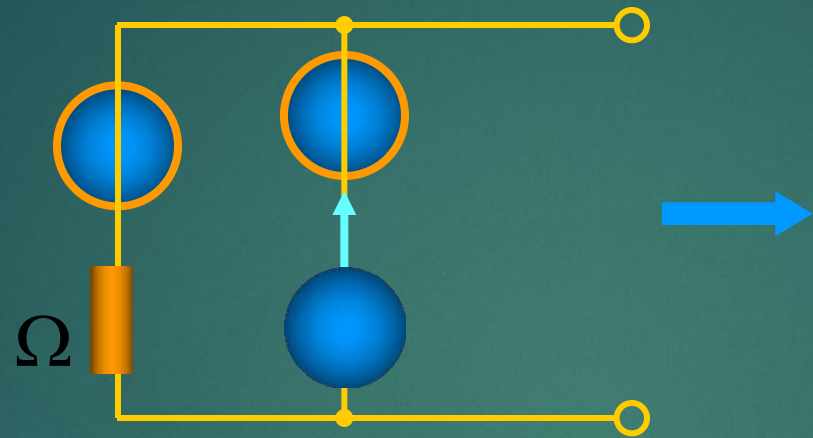


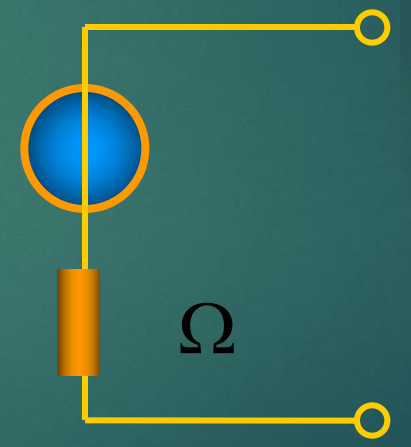
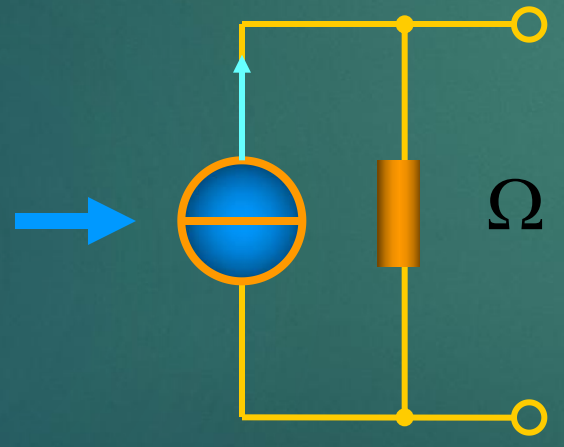
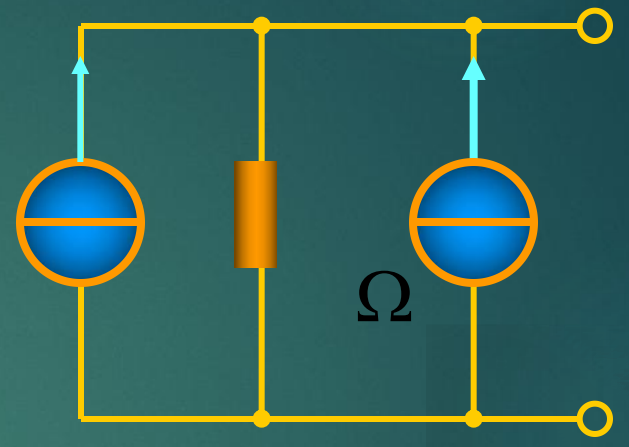
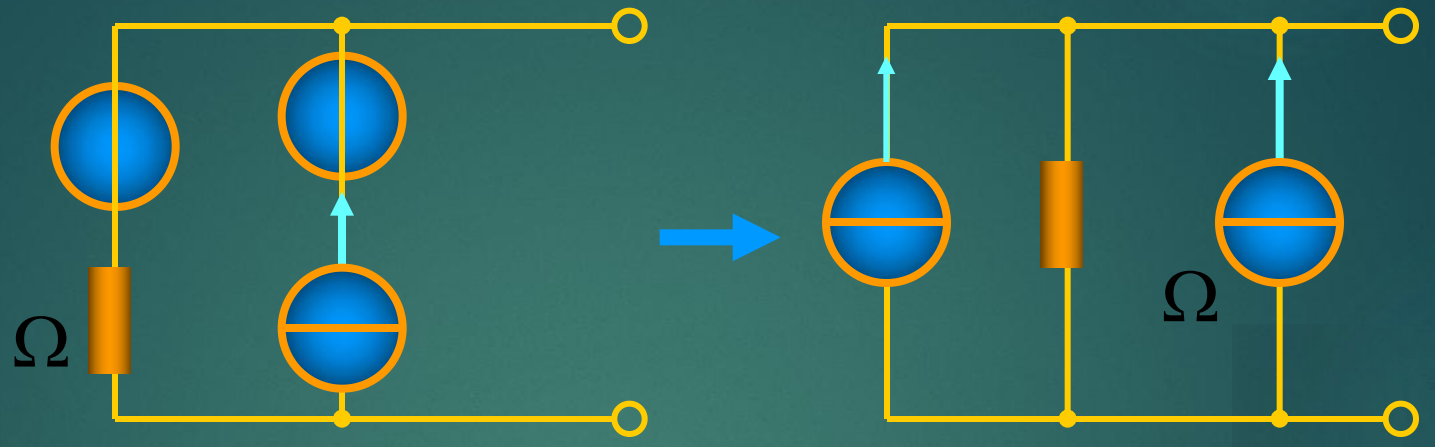
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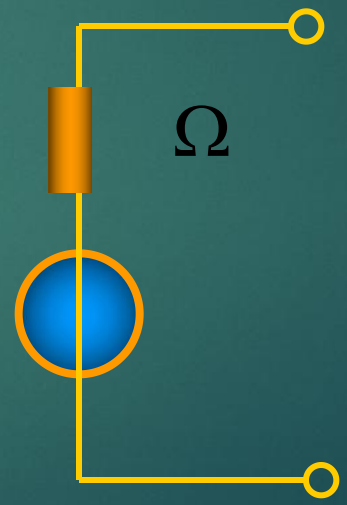
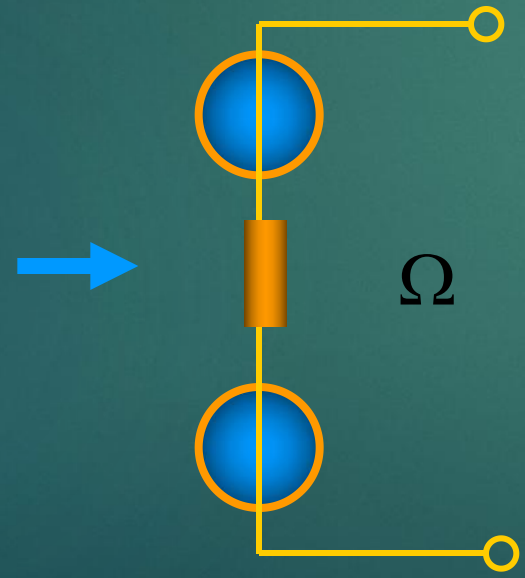
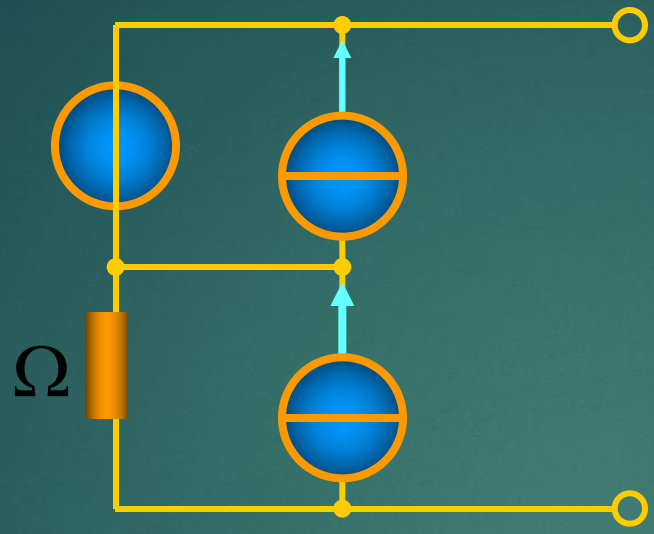
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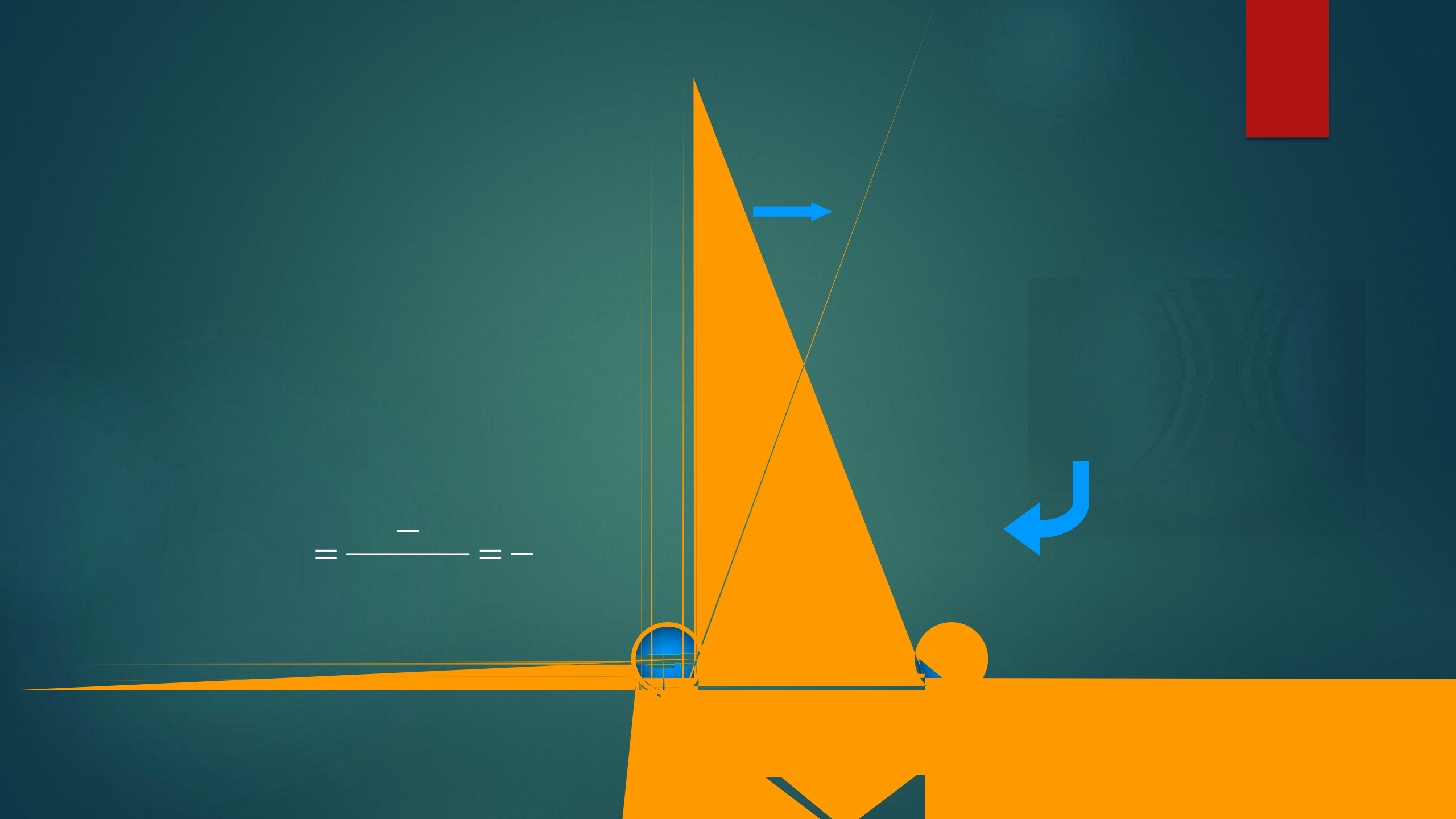
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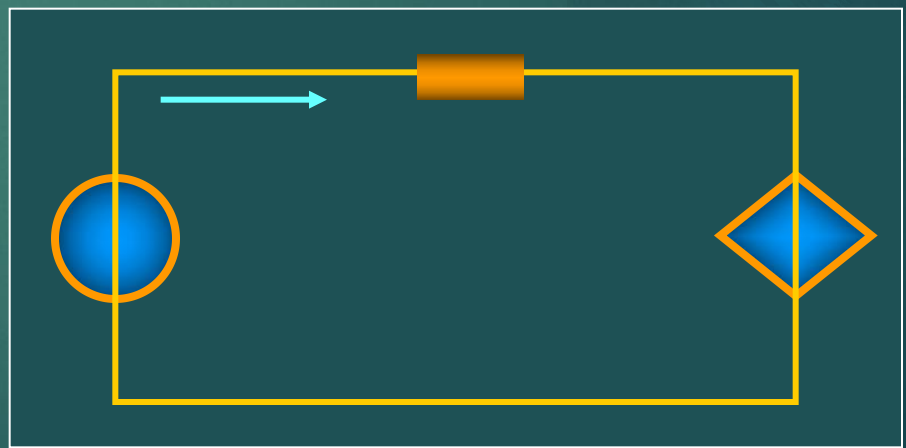
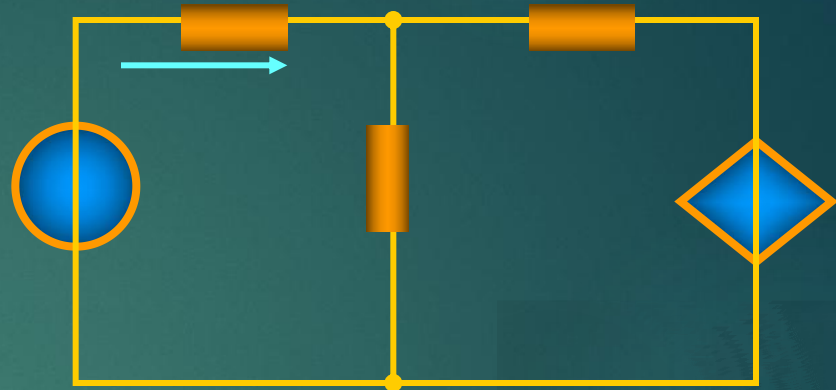






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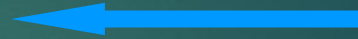
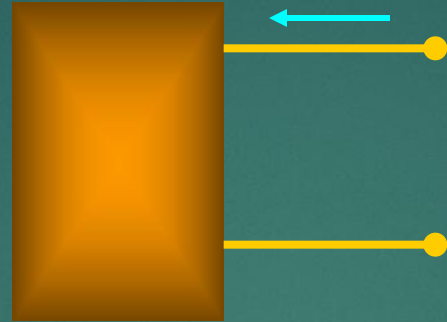
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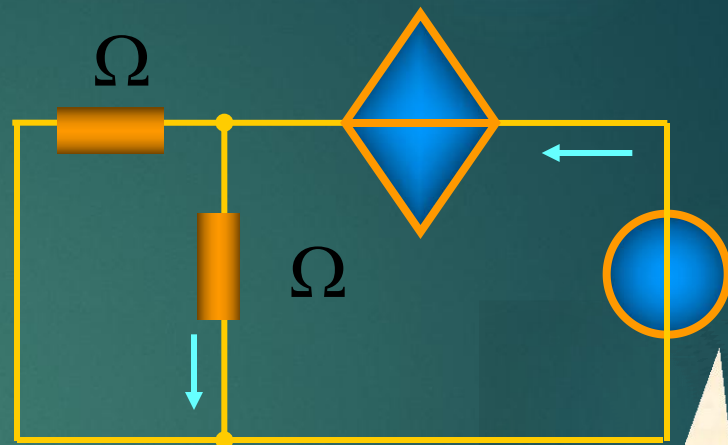
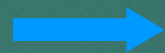
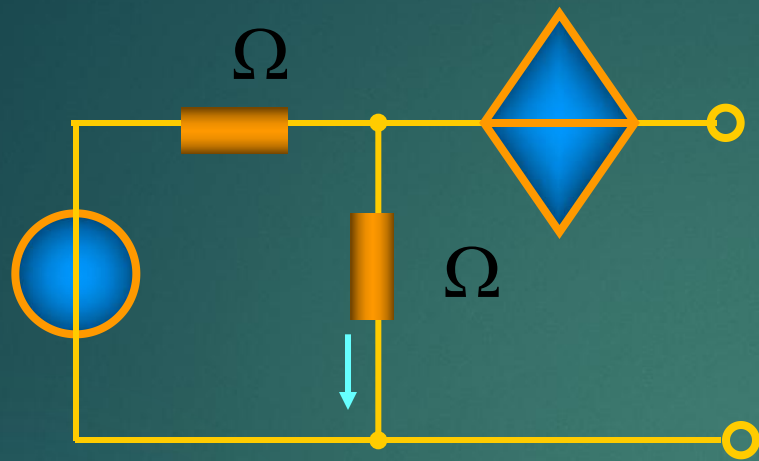
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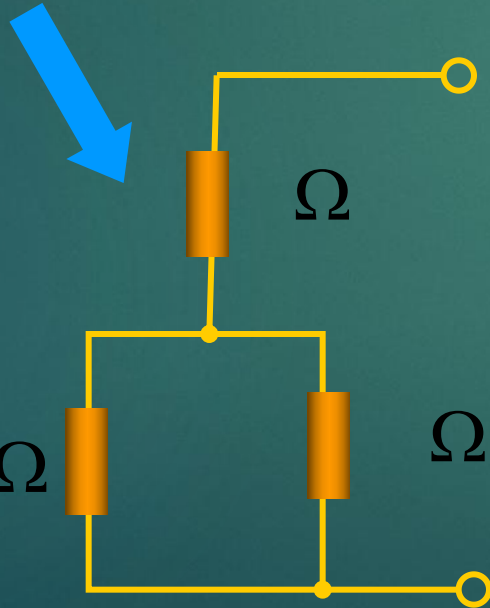
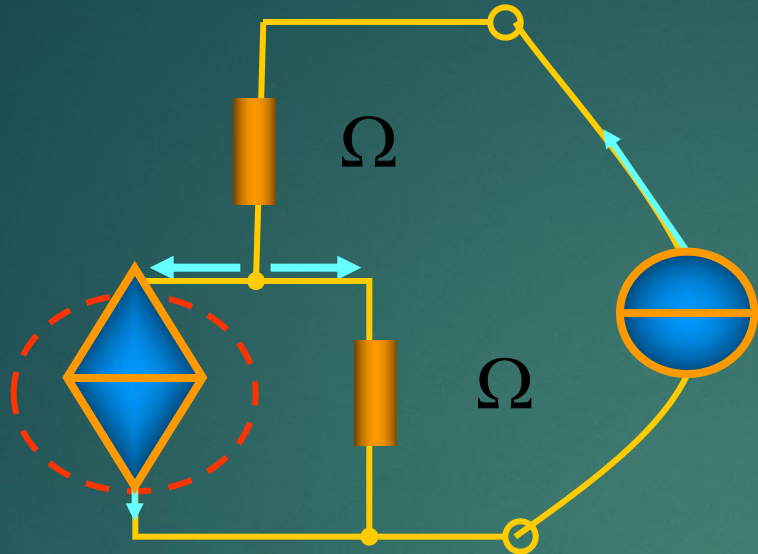




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