



# 6

6.1

6.2

6.3

\*6.4

**6**



**1.**

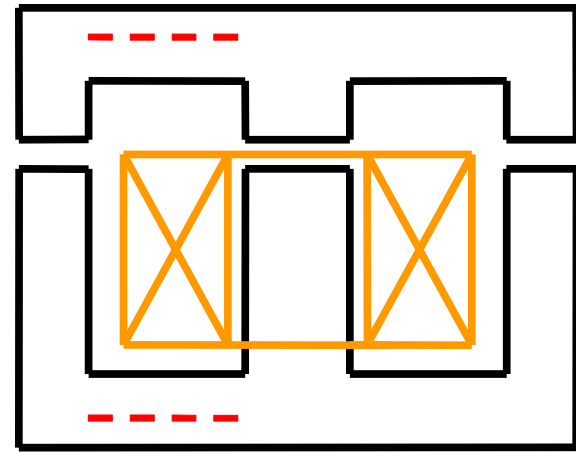
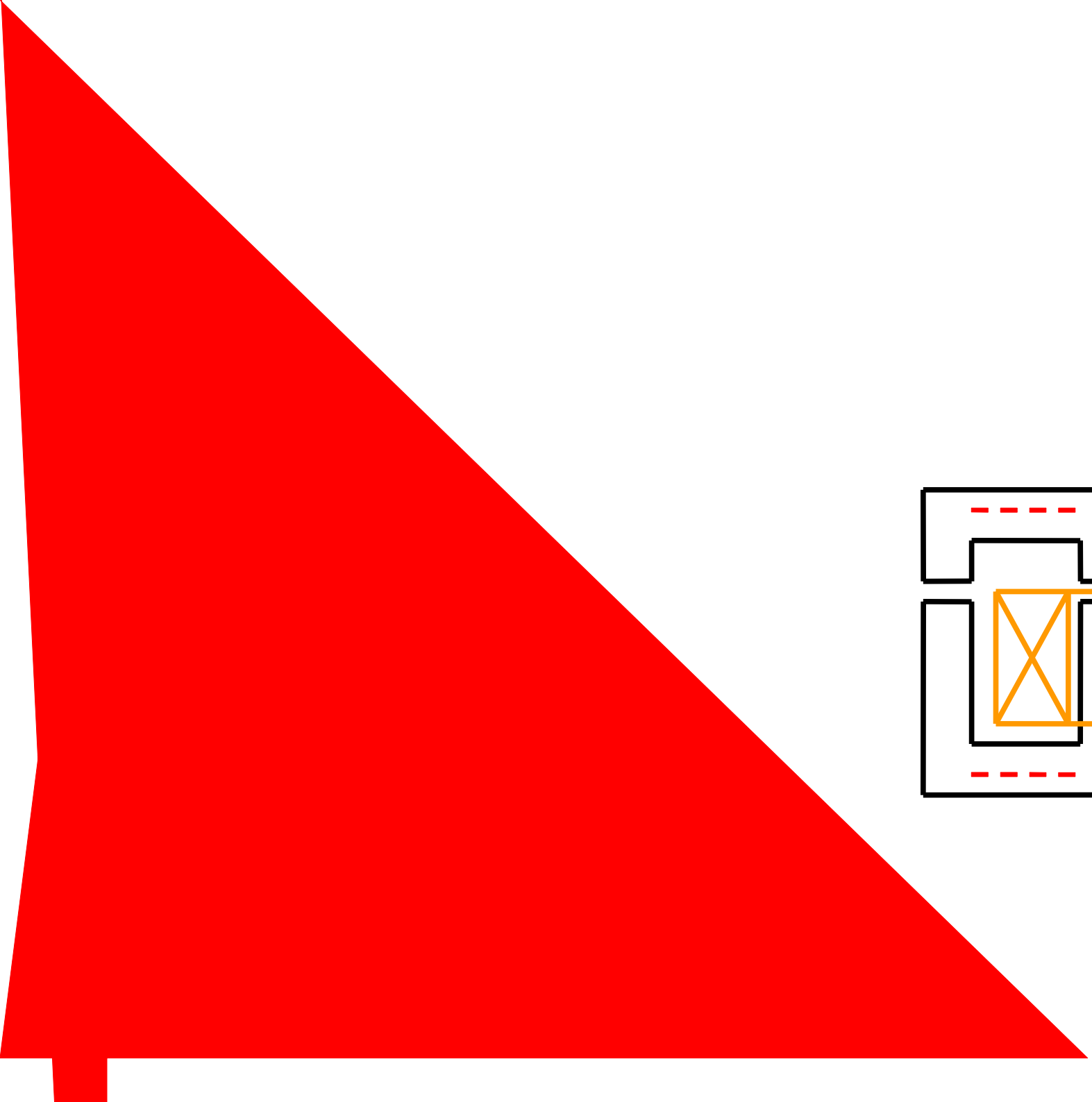
**2.**

**3.**

**\*4.**

# 6.1





## 6.1.1

1.

**B**

$$B = \frac{F}{\dots}$$

:

**(T) 1T = 1Wb/ 2**

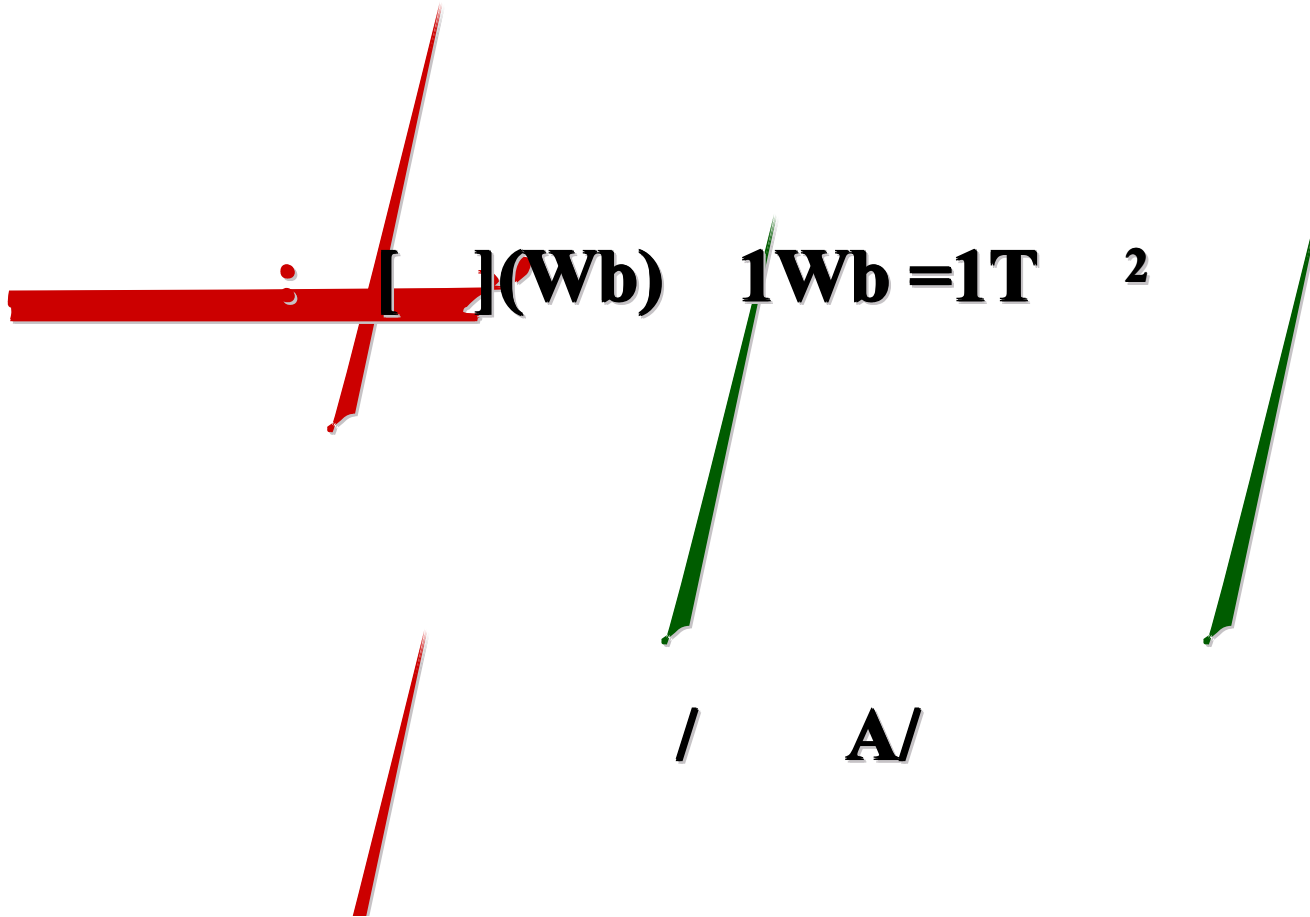
:



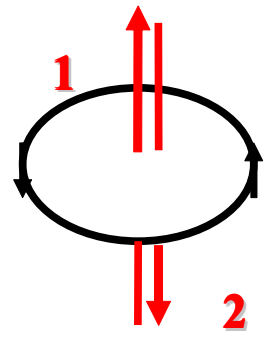
2.



3



$$\int_{\Sigma} \oint H = \sum$$



= —

4.



$$= \frac{1}{L} \text{ H/}$$

$$= \frac{1}{L} = \frac{1}{L} = \frac{1}{L}$$

$$L = 4 \times 10^{-7} \text{ H/}$$





r

0

$$\begin{array}{c} = \\ \hline 0 \end{array} = \begin{array}{c} = \\ \hline 0 \end{array} = \begin{array}{c} = \\ \hline 0 \end{array}$$

0

## 6.1.2



1.

$2 \times 10^5$ )

$\gg 1$  (

2.



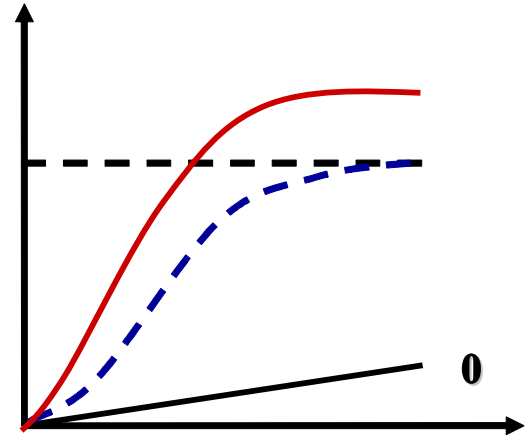
**J**

**0**

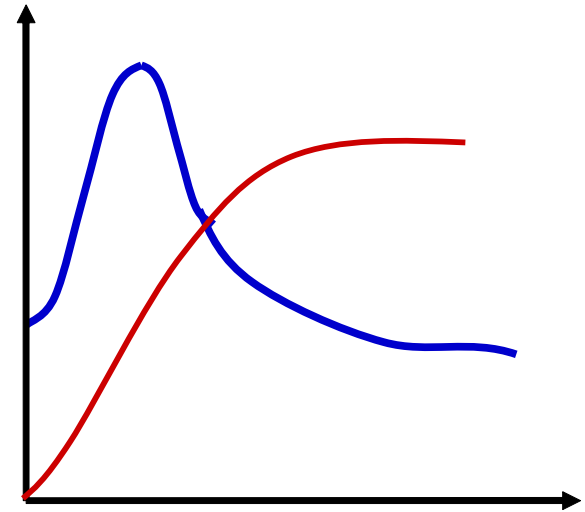
0

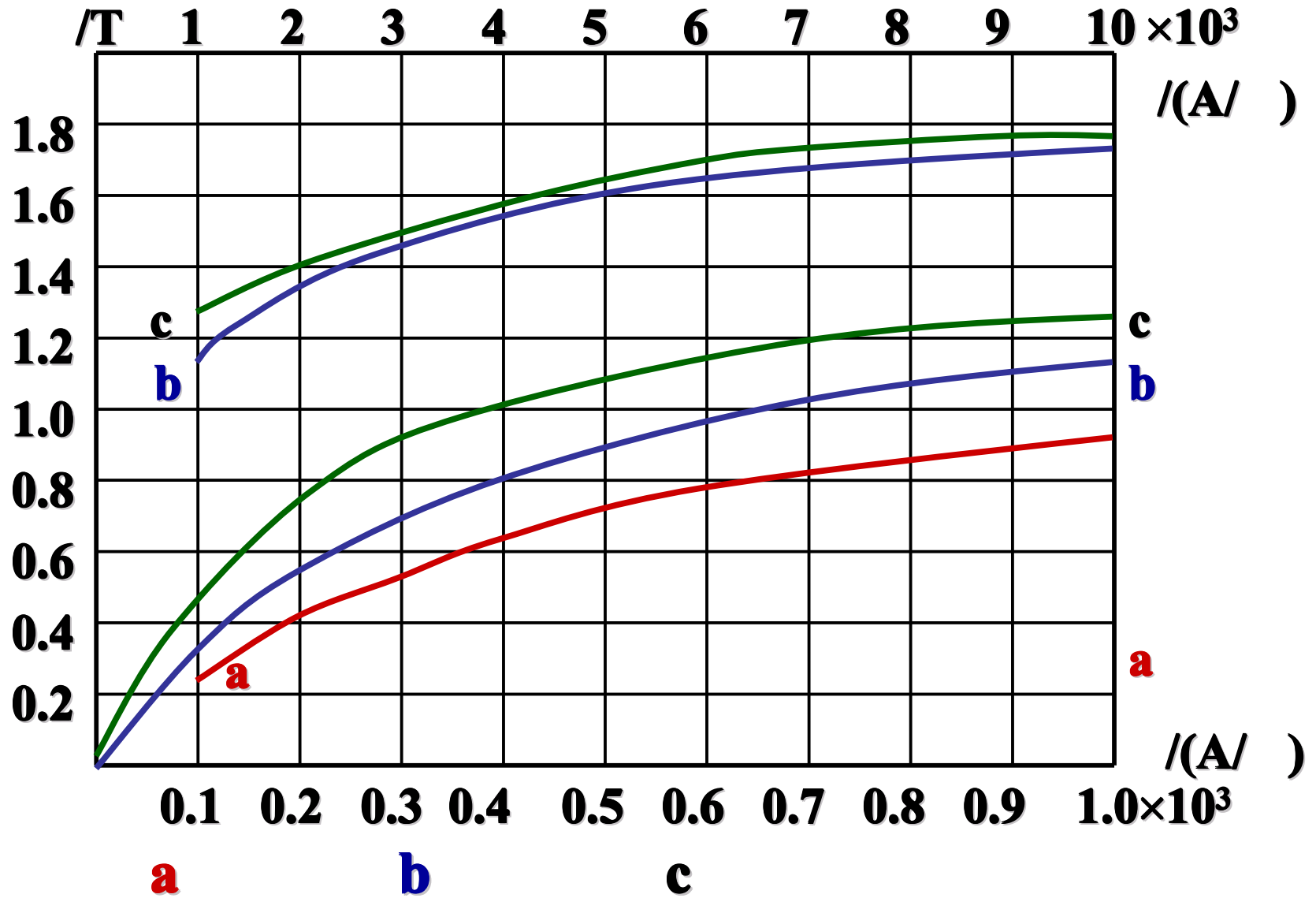
0

-



( $\Phi$ )



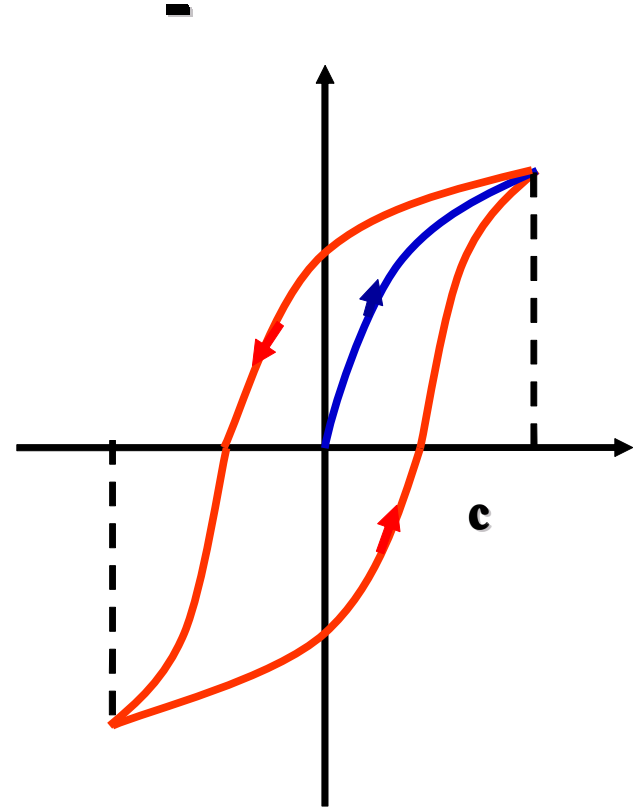


3



∴

( = 0 )

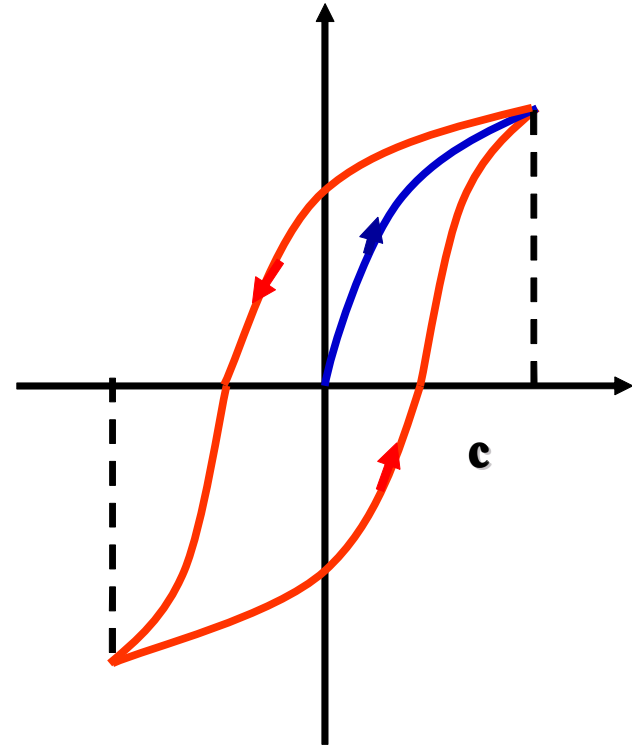


3.



$$= \mathbf{0}$$

$c$



**(1)**

**(2)**

**(3)**

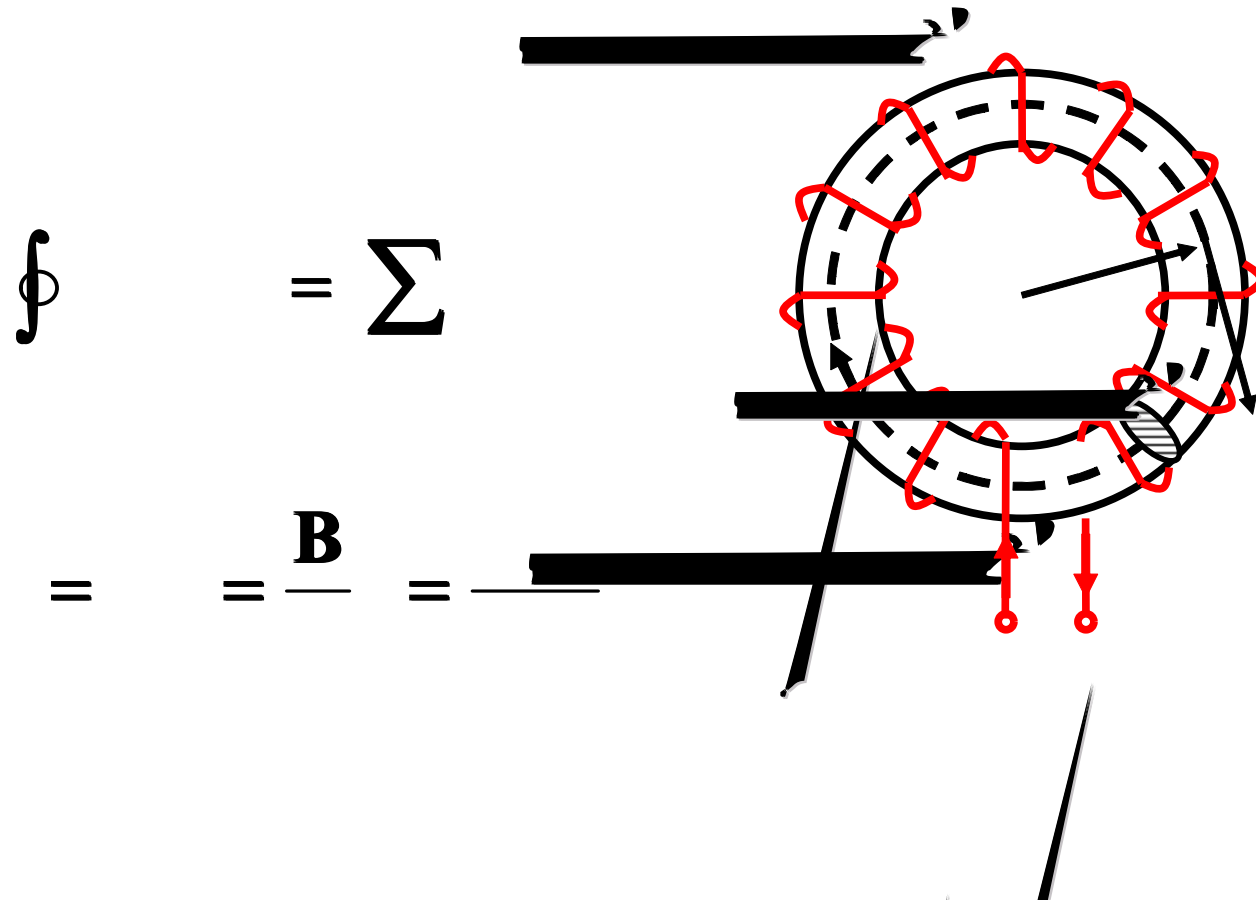




# 6.1.3



1.





$$= \frac{\quad}{\quad} = \frac{\quad}{\quad}$$

2.



3.



) :

(

,

:

$$= \frac{1}{1} + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n}$$

$$= \sum_{k=1}^n \frac{1}{k}$$

$$1 + \frac{1}{2} + \frac{1}{3} + \dots$$





⋮



(1)

$$1 = \frac{1}{1} + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n} + \dots$$

The equation above is heavily obscured by thick black horizontal bars. The visible parts include the number '1' on the left, followed by an equals sign and a series of terms separated by commas. The terms are  $\frac{1}{1}$ ,  $\frac{1}{2}$ ,  $\frac{1}{3}$ , an ellipsis, and  $\frac{1}{n}$ . A large 'S<sub>2</sub>' is written below the first two terms. To the right, there are more terms and an equals sign, but they are mostly hidden by black bars.

(2)

$$2 = \sum_{k=1}^{\infty} \left( \frac{1}{k} - \frac{1}{k+1} \right)$$

The equation above is heavily obscured by thick black diagonal lines. The visible parts include the number '2' on the left, followed by an equals sign and a summation symbol. The summation is over a range from 1 to infinity. The terms inside the summation are  $\frac{1}{k} - \frac{1}{k+1}$ . There are also some stray numbers and symbols visible, such as '1', '2', and '(', ')', which are partially obscured by the diagonal lines.

(3)

(4)

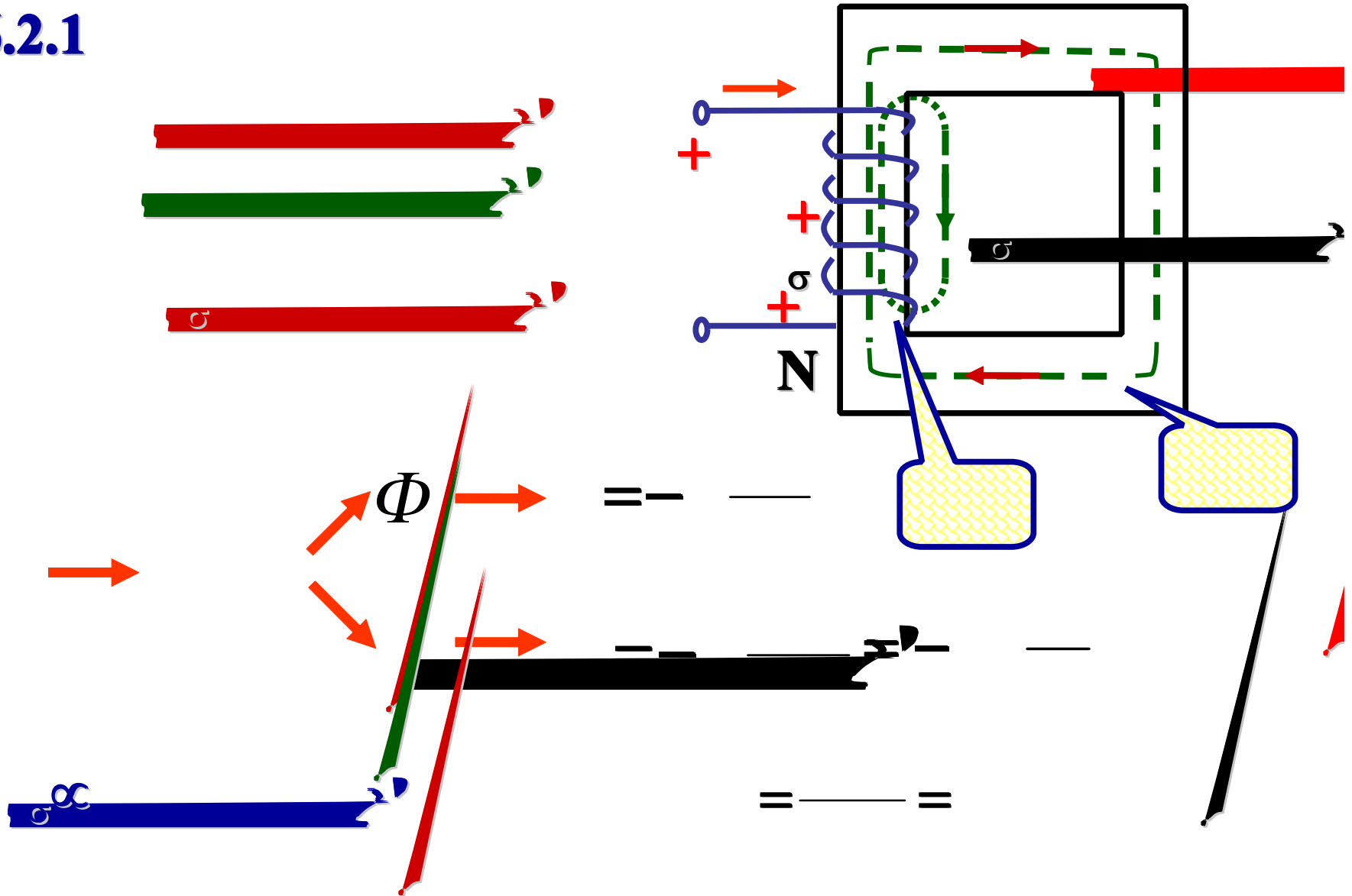
$$= \sum_{k=1}^{\infty} \frac{1}{k^2}$$

The equation above is heavily obscured by thick black diagonal lines. The visible parts include an equals sign followed by a summation symbol. The summation is over a range from 1 to infinity. The terms inside the summation are  $\frac{1}{k^2}$ .

# 6.2



## 6.2.1



## 6.2.2

**KVL:**

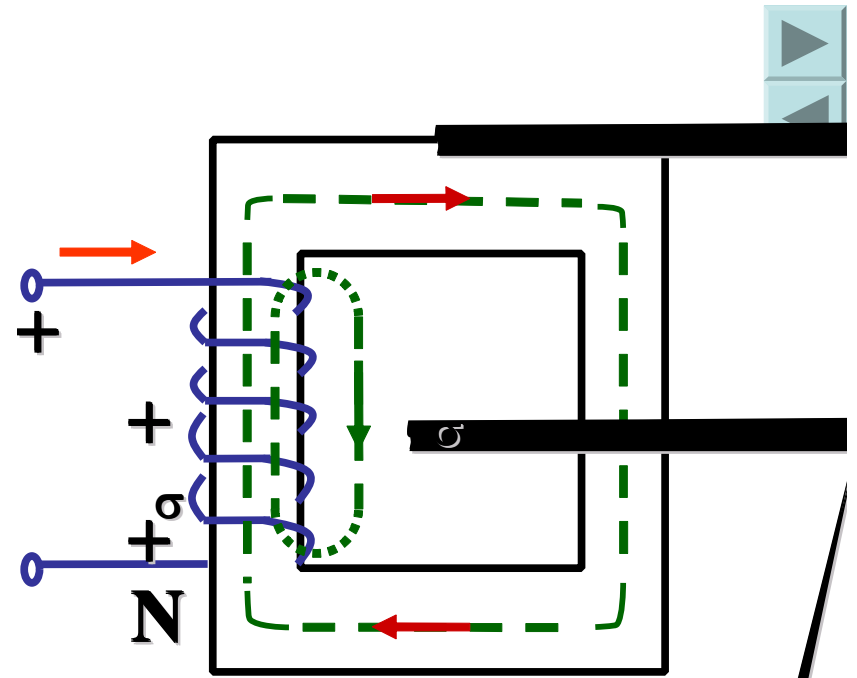
$$= - -$$

$$= + - + (-)$$

$\sigma$

$$\dot{=} + (-) + (-)$$

$$\dot{=} + + (-)$$





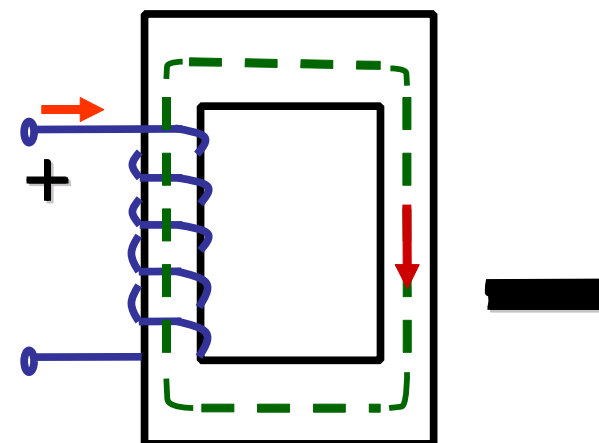
$$\begin{aligned} &= \dots + \dots + (-\dots) \\ &= -\dots \\ &= 2 \dots (-90^\circ) \dots (-90^\circ) \\ &= \frac{2}{\sqrt{2}} = \dots = 4.44 \dots \\ &\approx \dots \\ &\approx 4.44 \dots \text{ (V)} \\ &\quad \quad \quad \text{[T]} \end{aligned}$$

## 6.2.3



1.  $(\Delta_c)$

$$\Delta_c = 2 \Delta_c$$



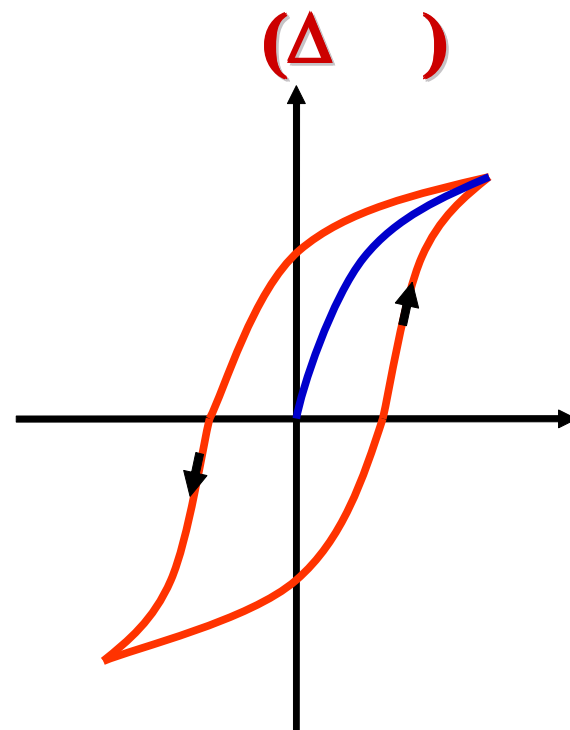
2.  $(\Delta_F)$

$$\Delta_F$$



1

$\Delta$

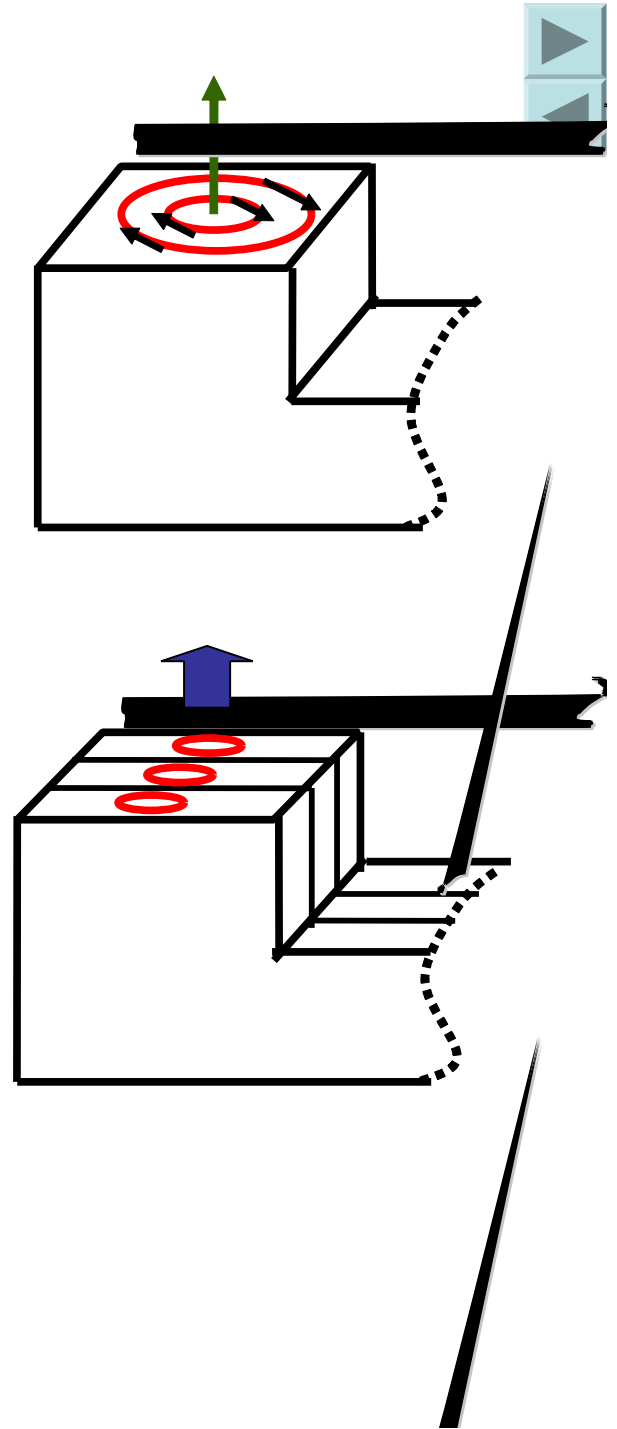


(2)

$\Delta$

:

$$= \mathbf{c} = 2 + \mathbf{F}$$



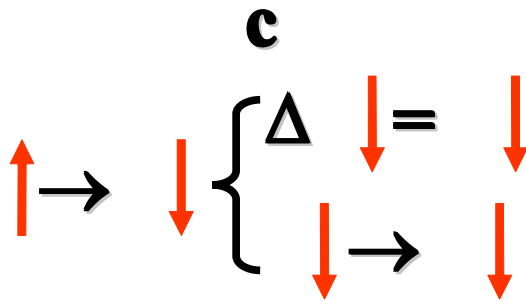


# 6.3

## 6.3.1

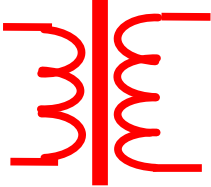


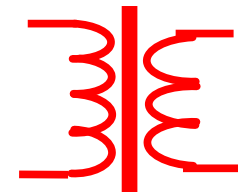
= **c**



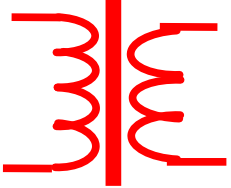


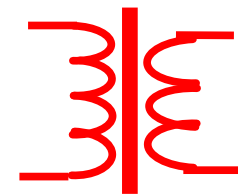
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10.5kV  220kV



10kV 

...   $\frac{380}{220V}$

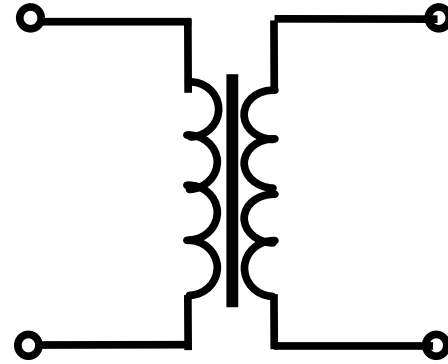


36V

1.

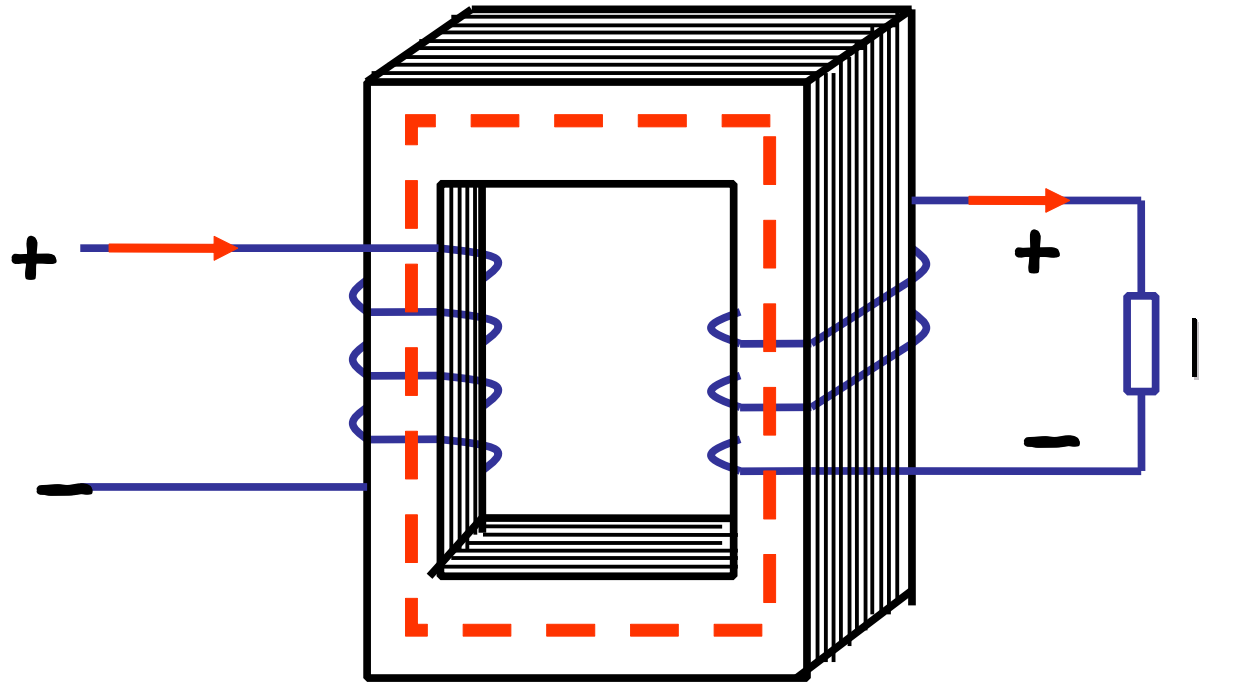


( )





2.

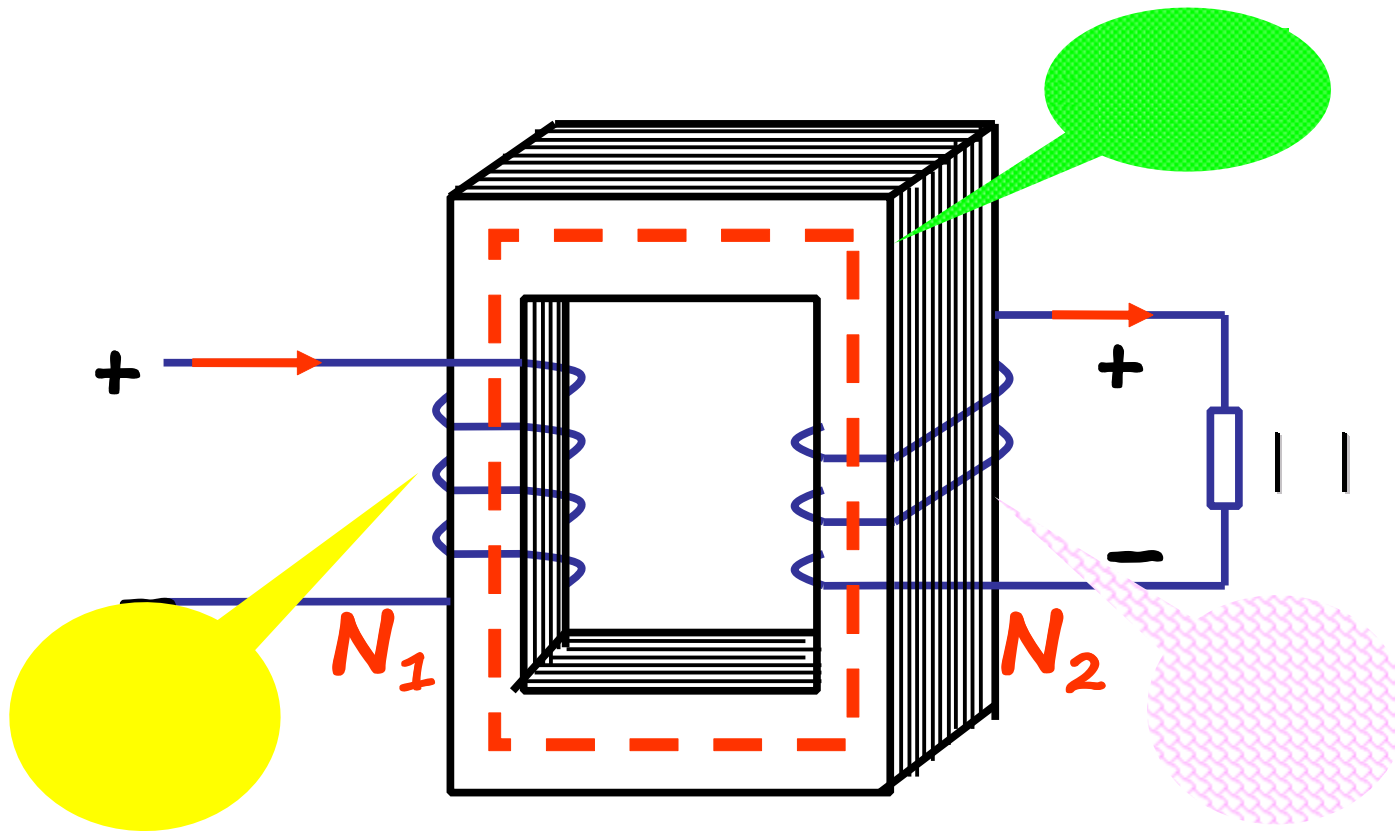


0.35mm

0.5mm

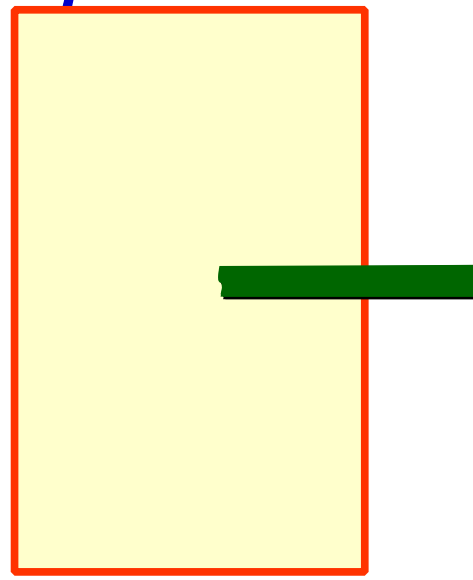
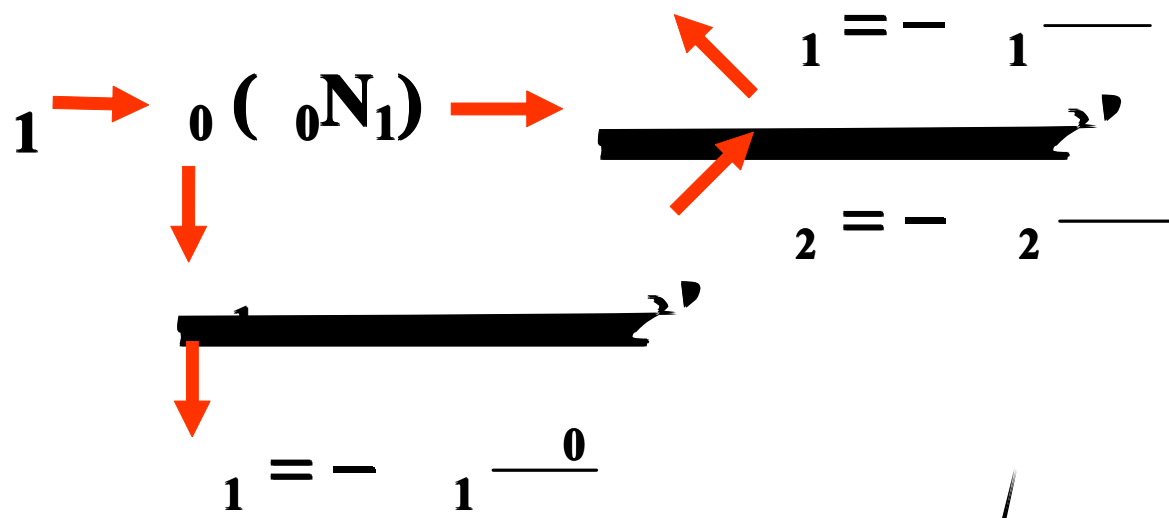
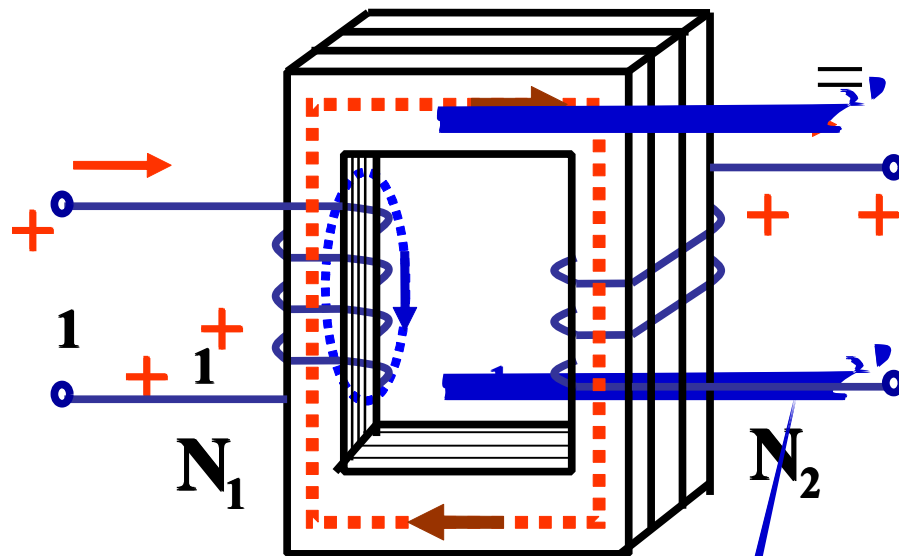


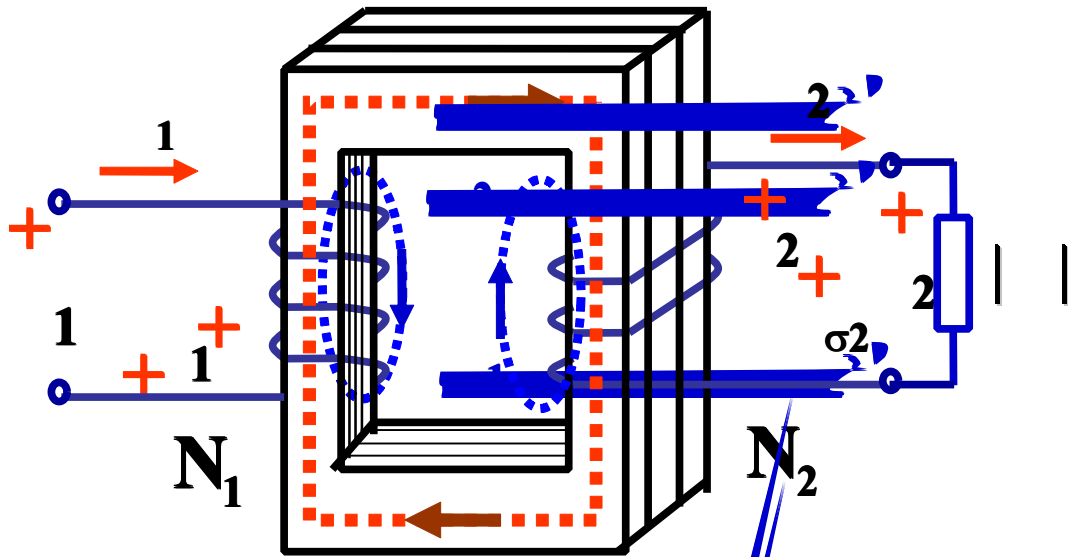
# 6.3.2





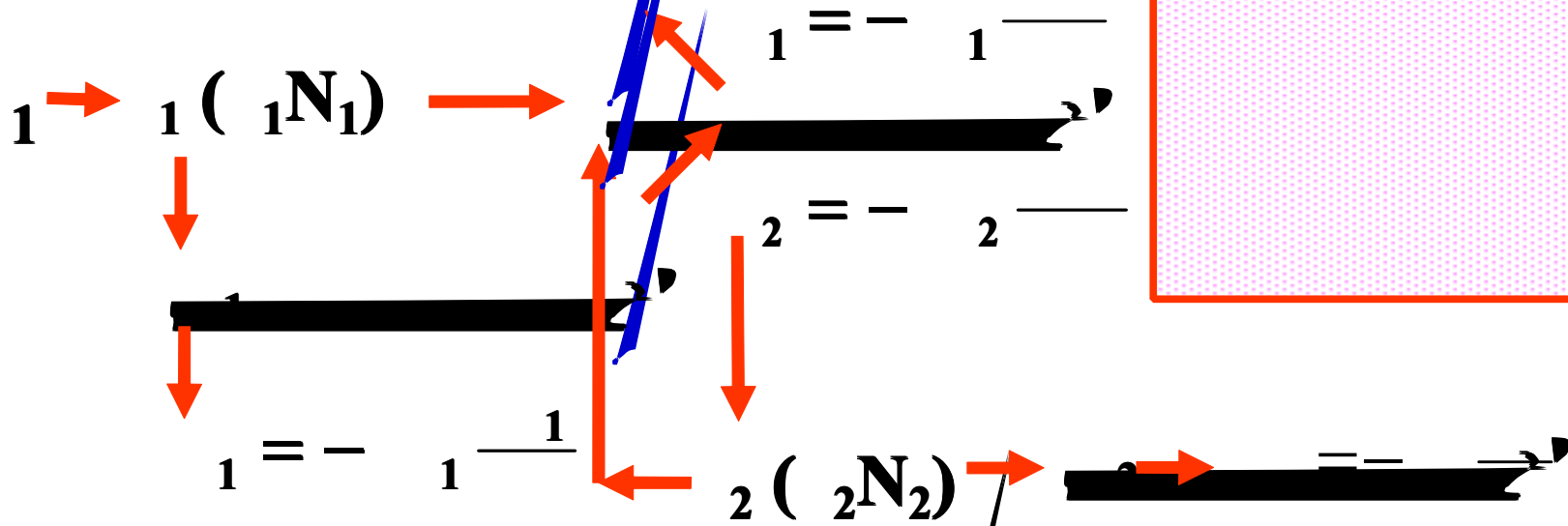
1.  
(1)





1.

(2)





2.

(1)

$$\Phi = \Phi$$

$$= - \frac{\Phi}{\sqrt{2}} = - \frac{\Phi}{\sqrt{2}}$$

$$= - \frac{1}{\sqrt{2}} \Phi$$

$$= \frac{1}{\sqrt{2}} \Phi \quad (-90^\circ)$$

$$\therefore \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} = \frac{2}{\sqrt{2}} \Phi$$

$$\frac{1}{\sqrt{2}} = 4.44$$

$$\frac{2}{\sqrt{2}} = 2 \quad (-90^\circ)$$

$$\frac{2}{\sqrt{2}} = 4.44$$

(2)

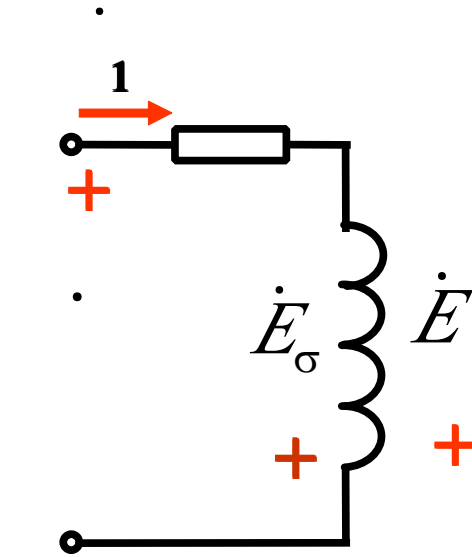


**KVL**

$$\begin{aligned}
 \dot{U}_1 &= \dot{U}_{R1} - \dot{U}_{L1} \\
 &= \dot{U}_1 + \dot{U}_1 - \dot{U}_1
 \end{aligned}$$

1 ;

$$\dot{U}_1 = \sigma \dot{U}_1$$



( )

$$\dot{U}_1 \approx - \dot{U}_1 \rightarrow \dot{U}_1 \approx \dot{U}_1 = 444$$



# KVL



2

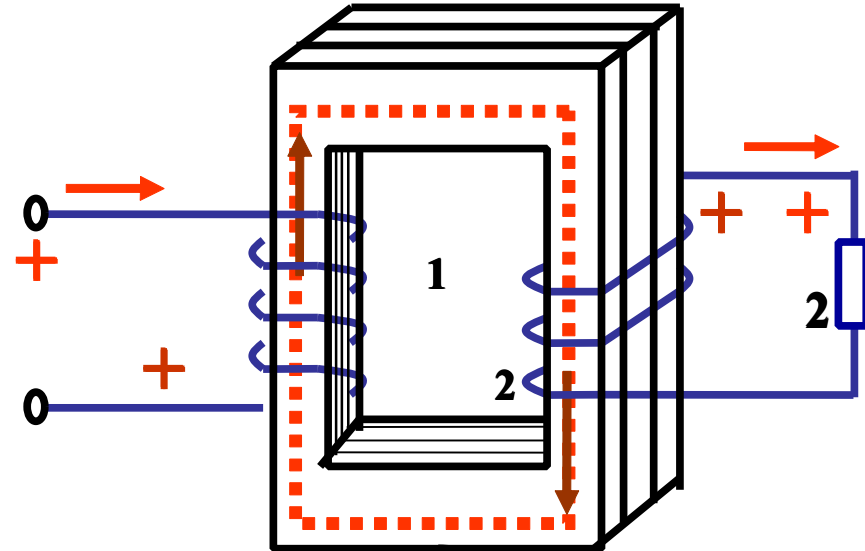
$$\text{---} \approx \frac{E}{E} = \text{---} =$$

3.

( )



$\rightarrow \dot{\phantom{x}} = \dot{\phantom{x}}$



$1 \approx 1 = 4 44$

1



0 1  $\rightarrow$





$$\frac{1 \ 1^+ \ 2 \ 2}{\phantom{1 \ 1^+ \ 2 \ 2}} = \frac{0 \ 1}{\phantom{0 \ 1}}$$

$$\frac{1 \ 1}{\phantom{1 \ 1}} = \frac{0 \ 1^- \ 2 \ 2}{\phantom{0 \ 1^- \ 2 \ 2}} \left\{ \begin{array}{l} 1. \\ 2. \end{array} \right.$$

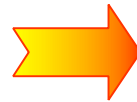


$$0 \approx (2 \ 3) \% \ 1N$$

$$1 \ 1 \approx - \ 2 \ 2$$

$$\overset{\cdot}{1} \ \overset{\cdot}{1} \approx - \ \overset{\cdot}{2} \ \overset{\cdot}{2}$$

$$1 \ 1 \approx 2 \ 2$$

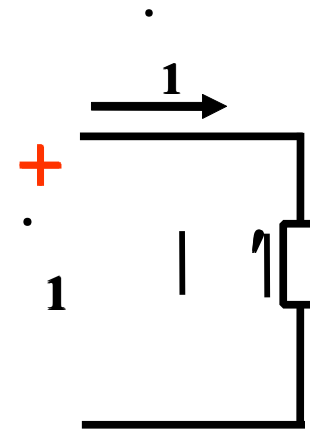
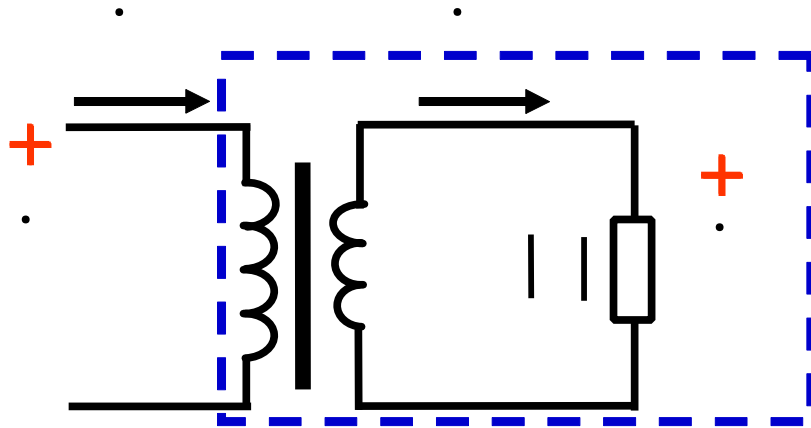


$$\text{---} \approx \text{---} = \text{---}$$





4.



$$\left| \right| = \frac{2}{2}$$

$$\left| \right|' = \frac{1}{1}$$

$$\left| \right|' = \frac{1}{1} = \frac{1}{1} = \frac{1}{1} = \frac{1}{1} = \left| \right|$$

$$\left| \right|' = \left| \right|$$

2



**1:**

$$= 120V$$

$$= 800$$

$\Omega$

$$= 8\Omega$$

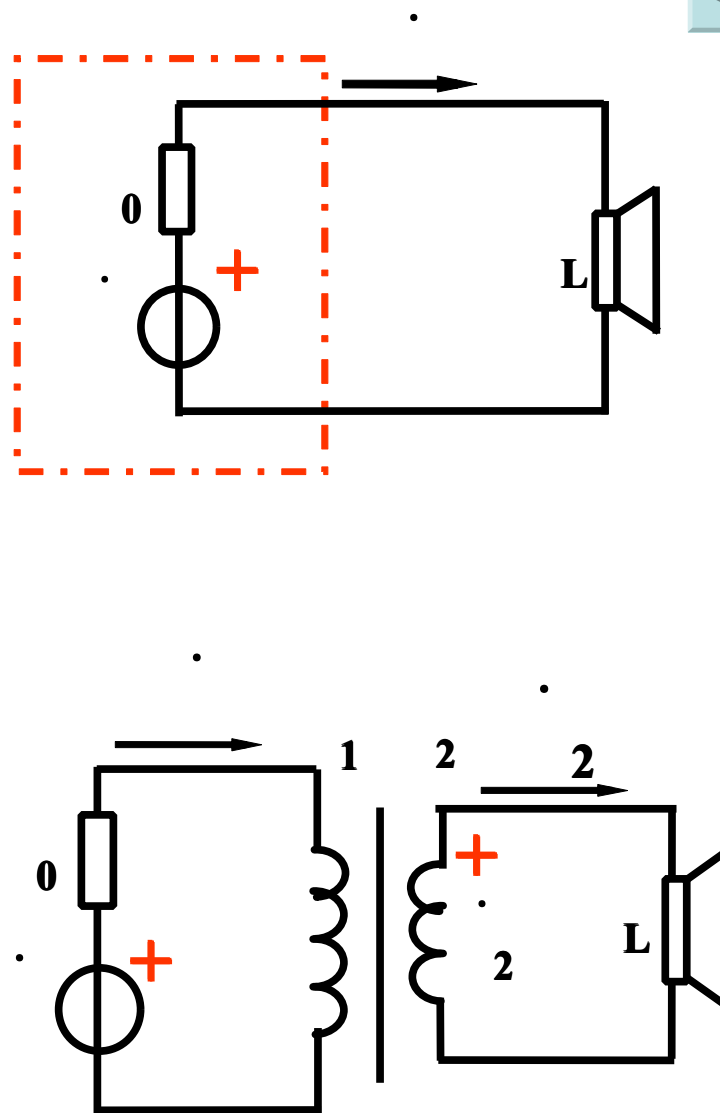
**(1)** ,  $L$   
 $=$

**2**

,

**(1)**

$$= \sqrt{\quad} = \sqrt{\quad} =$$





$$= \left( \frac{120}{800 + 800} \right)^2 \times 800 = 45 \text{ W}$$

**2**

$$= \left( \frac{120}{800 + 8} \right)^2 \times 8 = 0.176 \text{ W}$$

---

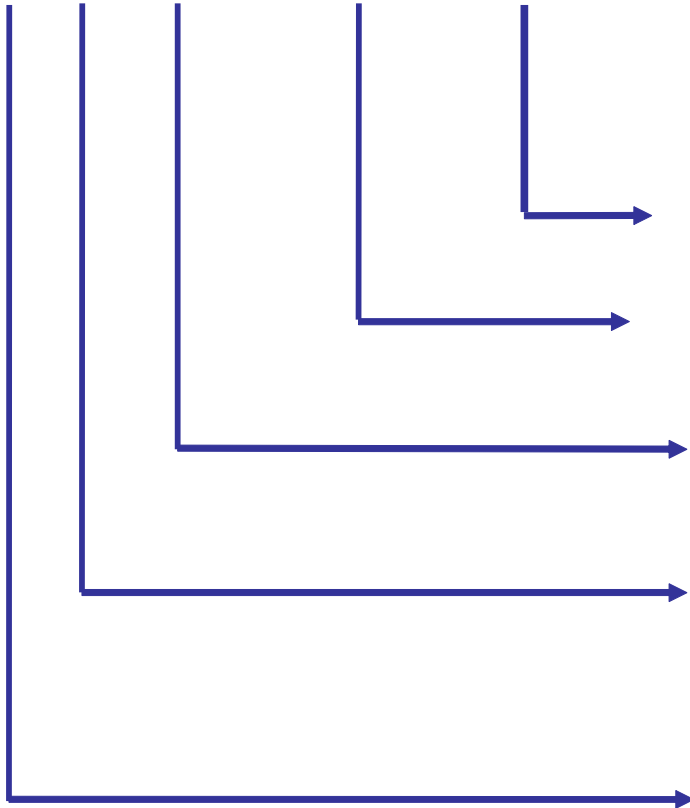
$$\underline{\underline{I_L = 0}}$$



**5.**

**1)**

**S J L —1000/10**



**( V )**

**( VA )**

**{ J:  
F:**

**{ S:  
D:**

2)



**1N**      **2N**



**1N**

**2N**

**1N**

**2N**

**1N**

**2N**



2)



N



$$N = \frac{2N}{2N} \approx \frac{1N}{1N}$$

$$N = \sqrt{3} \frac{2N}{2N} \approx \sqrt{3} \frac{1N}{1N}$$

( )



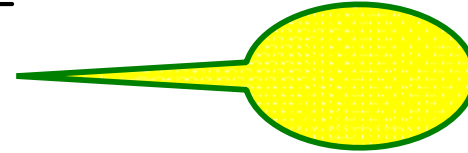
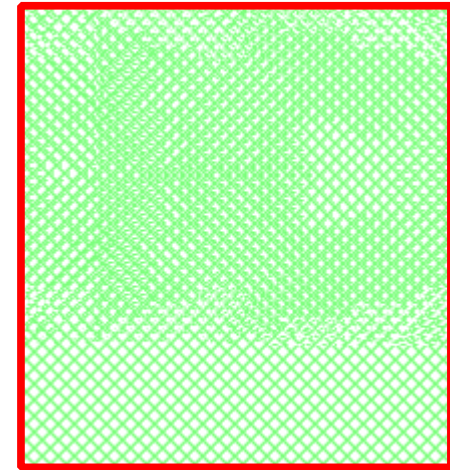
$$N = \frac{1N}{2} \times \frac{1N}{2} \mathbf{c}$$

$$1 = \frac{2}{2}$$

N ≠

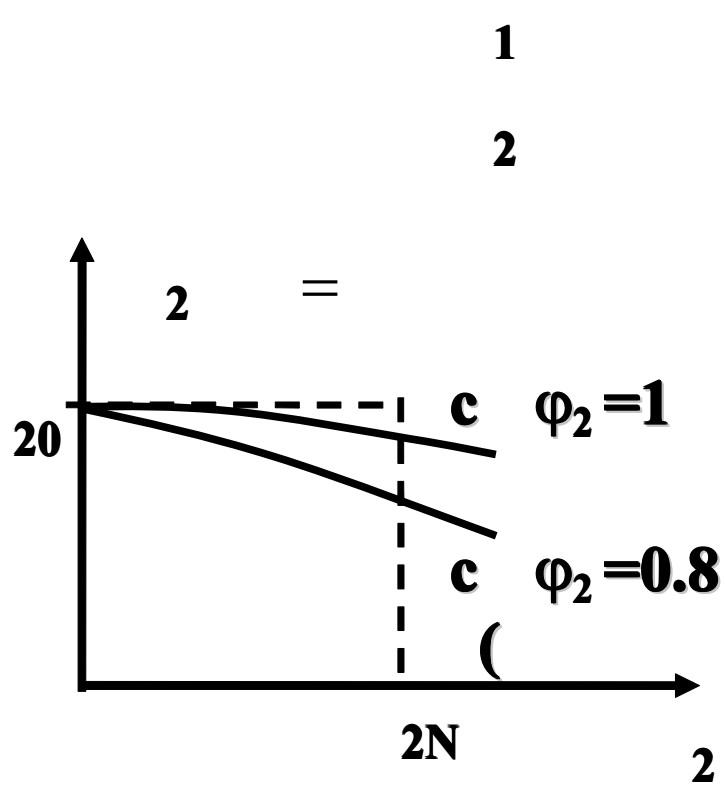
1 ≠

2



# 6.3.3

1.





$$\Delta \% = \frac{20 - 19}{20} \times 100 \% = 5\%$$

**2.**



**( $\Delta_c$ )**

**( $\Delta_F$ )**


$$= \frac{2}{1} = \frac{2}{2^+ \quad c^+ \quad F}$$

**95% ,**

**(50 75)% ,**

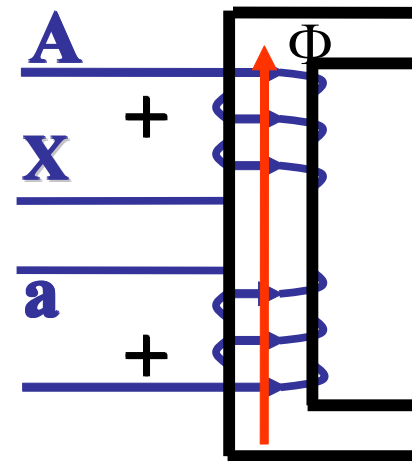
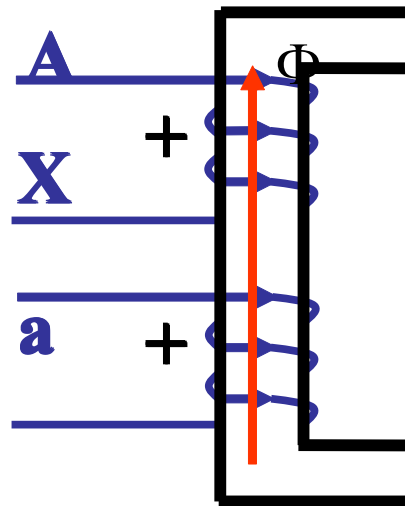
# 6.3.4

1.

( )

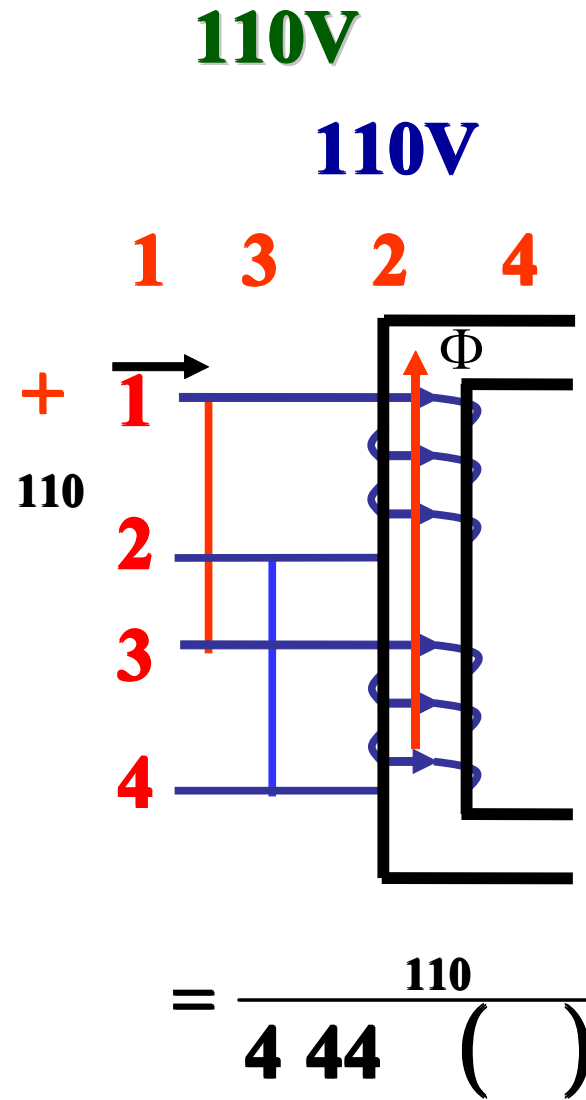
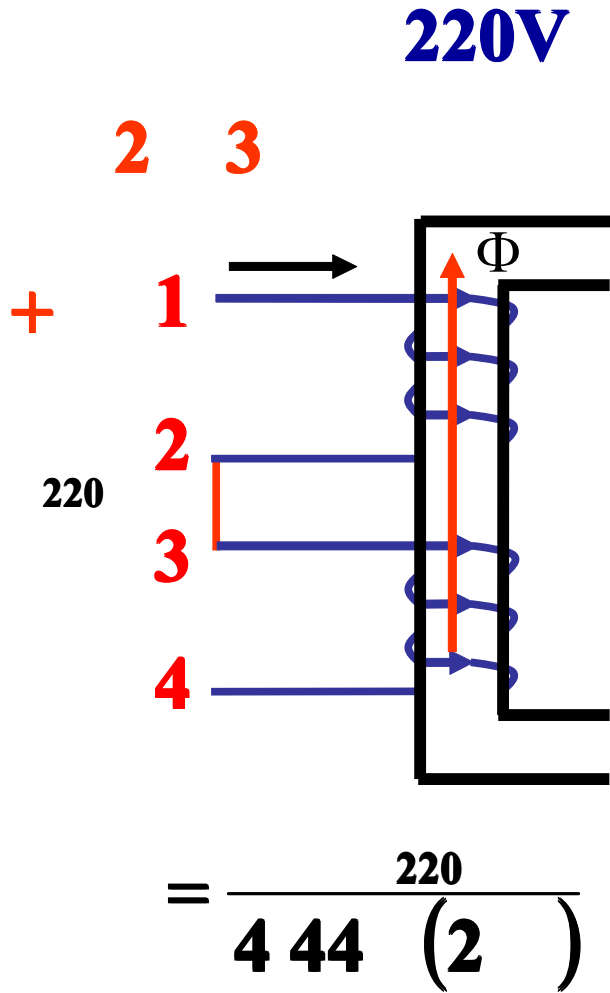
(

(





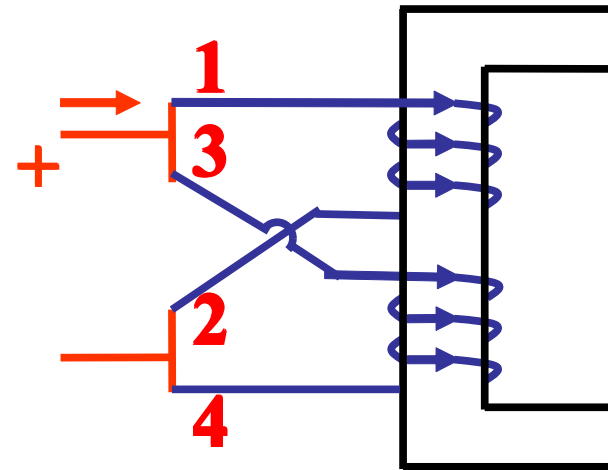
2.



(220/110)



**1**    **110V**

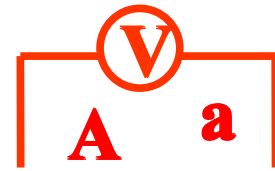


2



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

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



(X - ) ,

**AX**

**AX**

**AX**

**Aa**

**a**



**A**

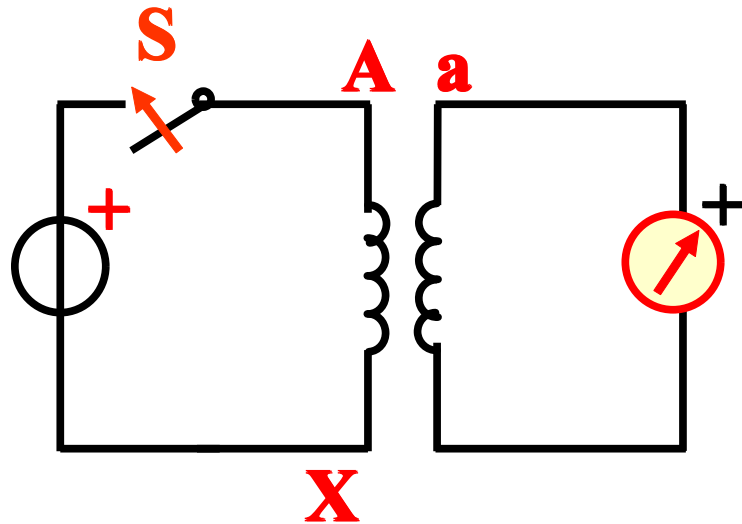
**a**

**X**

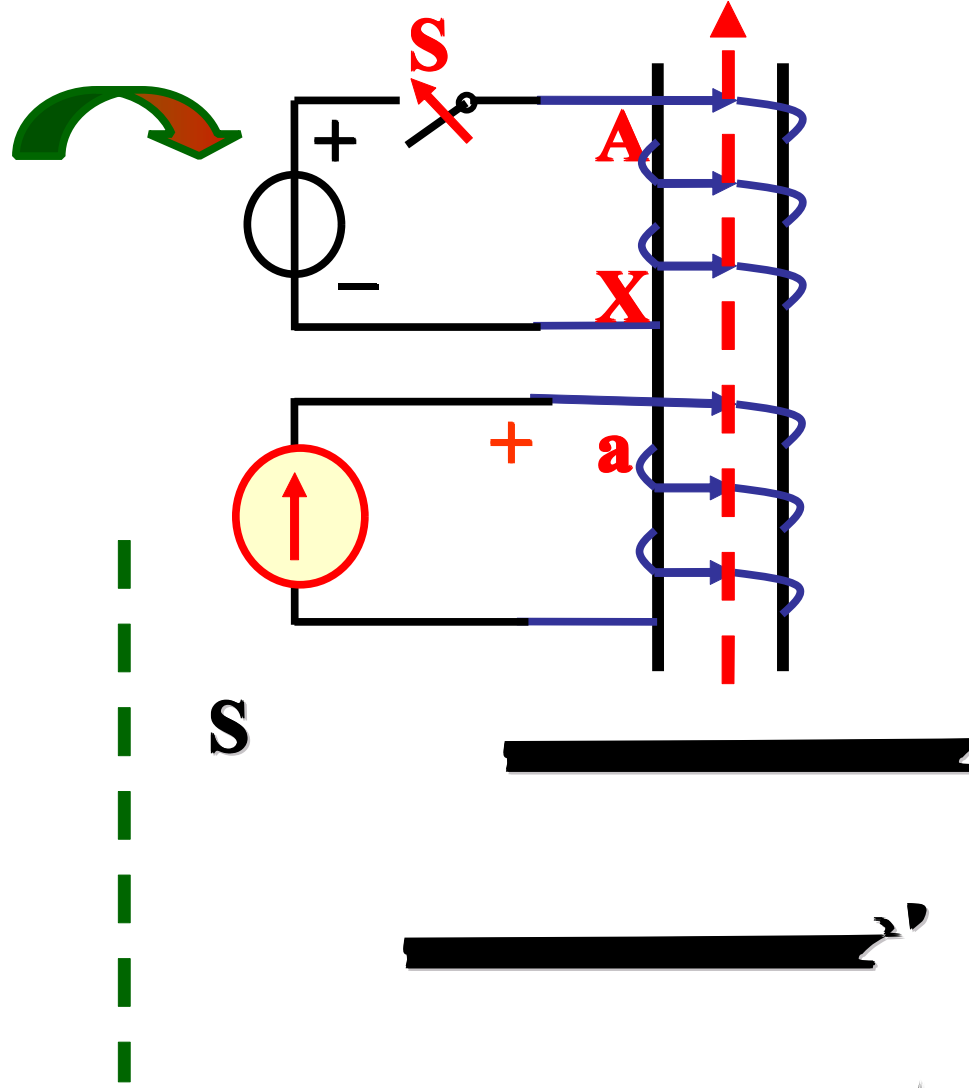
**A**

**X**

**a**



**S**  
**A-a**  
;  
**S**  
**A-**

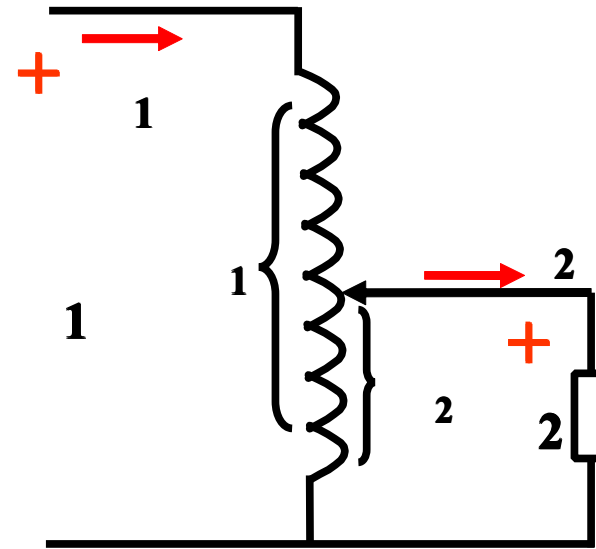


**S**

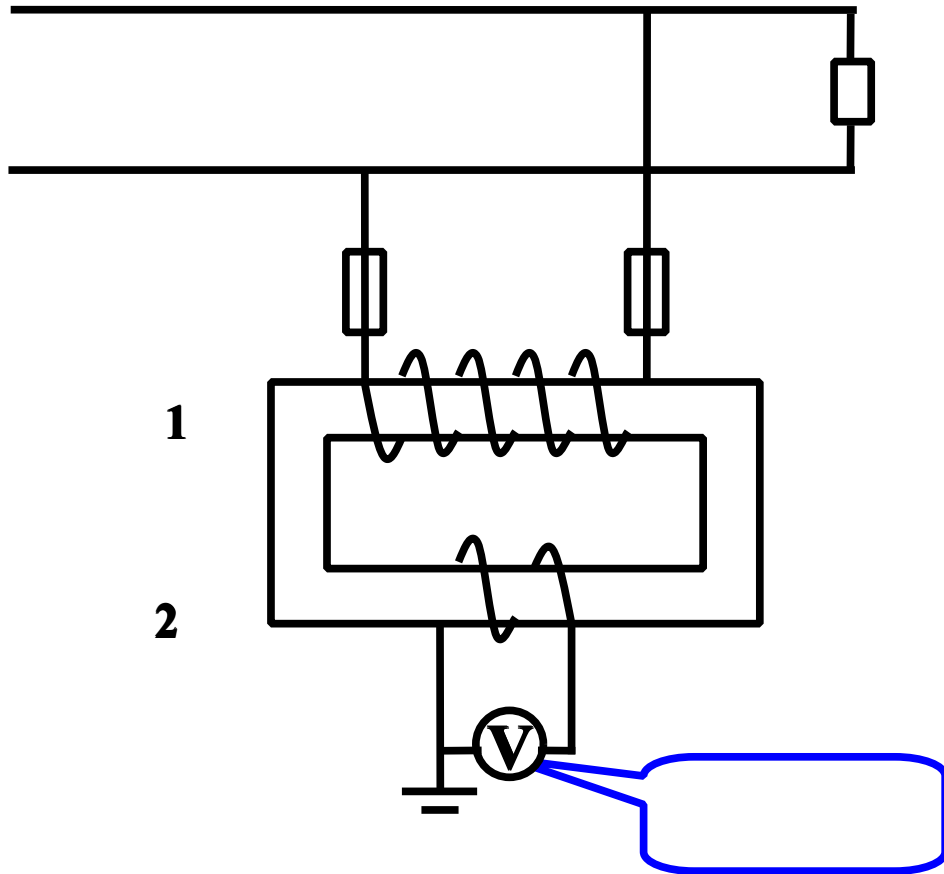


## 6.3.5

$$\frac{1}{2} = \frac{1}{2} =$$
$$\frac{1}{2} = \frac{2}{1} = \mathbf{1}$$



2.



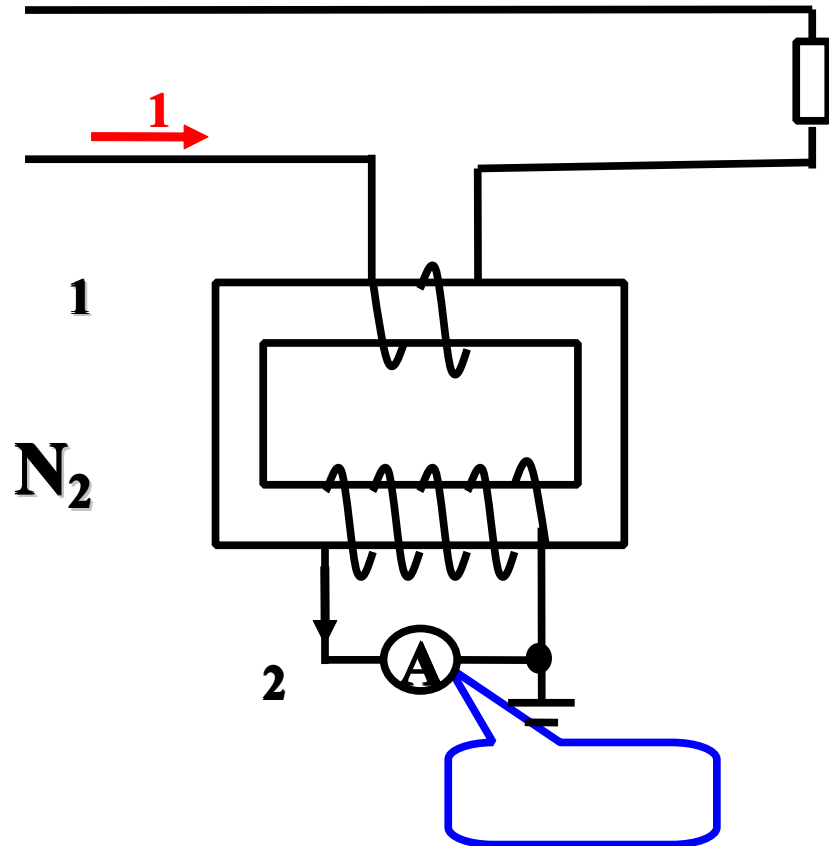
1.

2.

$$= \times \frac{1}{2}$$



3.



1.

2.

$$N_2 = N_1 \times \frac{2}{1}$$



