

(9)

1 (10)

x ():

$$u = \frac{u_L}{L} x. \quad (2)$$

:

$$v_x = v \cos \{, \quad (2)$$

$$v_y = v \sin \{ - u. \quad (2)$$

,

$x = vt \cos \{, \quad (1)$

$$y = vt \sin \{ - \left(\frac{u_L v \cos \{ }{L} \right) \frac{t^2}{2}. \quad (1)$$

,

$$\sin \{ = \frac{u_L}{2v} = \frac{1}{2} \Rightarrow \{ = 30^\circ. \quad (2)$$

2 (10)

$$v_x = v_0 \cos \Gamma, \quad (2)$$

$$v_y = v_0 \sin \Gamma - gt. \quad (2)$$

,

$$tgS = \frac{v_y}{v_x}. \quad (2)$$

:

$$tgS = \frac{v_0 \sin \Gamma - gt}{v_0 \cos \Gamma}. \quad (1)$$

:

$$tgS = tg\Gamma - \frac{gt}{v_0 \cos \Gamma} \Rightarrow t = \frac{v_0 \cos \Gamma}{g} (tg\Gamma - tgS). \quad (2)$$

:

$$t = \frac{20 \cdot \cos 45^\circ}{10} (tg 45^\circ - tg 30^\circ) \approx 0,6. \quad (1)$$

3 (10)

$$m c(t_1 - t') = m_2 c(t^2 - t_2), \quad (3)$$

$m -$

$, t' -$

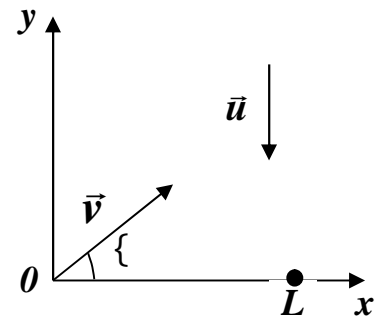
1-

$$m c(t'' - t') = (m_1 - m) c(t_1 - t''), \quad (3)$$

$t'' -$

2-

$$m = m_2 \frac{(t^2 - t_2)}{(t_1 - t')}. \quad (1)$$



$x -$

$, \quad :$

$$x = L, y = 0, \quad :$$

:

$$s = 30^\circ:$$

:

:

:

$$t' = 25^\circ\text{C} \quad (2)$$

$$m = \dots V_2 \frac{(t' - t_2)}{(t_1 - t')} = 1000 \cdot 0,001 \frac{(25 - 20)}{(60 - 25)} \approx 0,14 \quad (1)$$

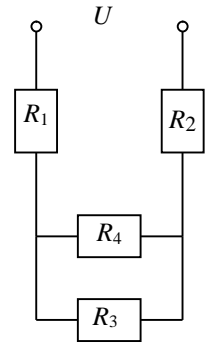
4 (10)

AE, R₂ - BF, R₃ - ECF, R₄ - EF).

R₀ -

ACB.

$$R = \dots \frac{l}{S}$$



$$R_1 = R_2 = \frac{R_0}{4}, R_3 = R_4 = \frac{R_0}{2} \quad (2)$$

$$R = \frac{R_0}{4} + \frac{R_0}{4} + \frac{\frac{R_0}{2} \frac{R_0}{2}}{\frac{R_0}{2} + \frac{R_0}{2}} = \frac{3R_0}{4} \quad (2)$$

$$I = \frac{U}{R} = \frac{4U}{3R_0} \quad (2)$$

$$I_3 = I_4 = \frac{I}{2} \quad (2)$$

$$U_4 = I_4 R_4 = \frac{I}{2} \cdot \frac{R_0}{2} = \frac{3R_0}{2} \cdot \frac{R_0}{2} \cdot \frac{U}{3R_0} = \frac{U}{3} = 1 \quad (2)$$

5 (10)

$$S_1' S_2' = S_1 S_2 \quad (3)$$

$$S_1 S_1' = S_2 S_2' = 2a \quad (2)$$

$$S_1 S_2' = S_1' S_2 = b \quad (2)$$

$$b^2 = (2a)^2 + x^2 \quad (2)$$

$$x = \sqrt{b^2 - 4a^2} = \sqrt{2500 - 1600} = 30 \quad (1)$$