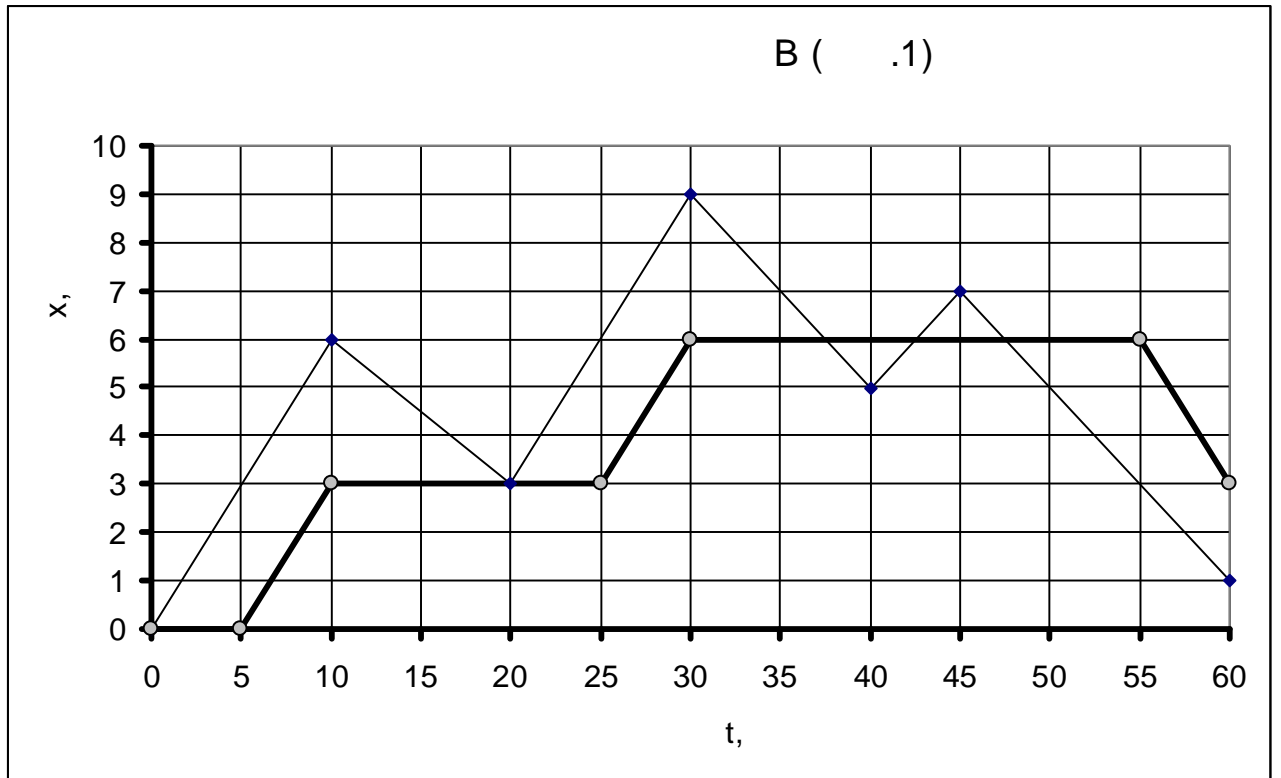


9-1.

1. ().

1.1

A , B
 B, A l = 3,0
 B, .1.



1.2

:

$$S_A = 6 + 3 + 6 + 4 + 2 + 6 = 27$$

$$S_B = 3 + 3 + 3 = 9,0$$

(1)

2.

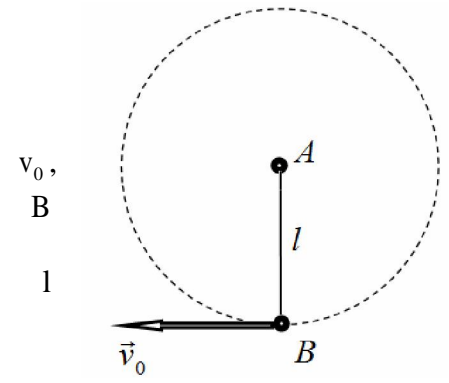
2.1

,

A.

B

A (. .)



2.2

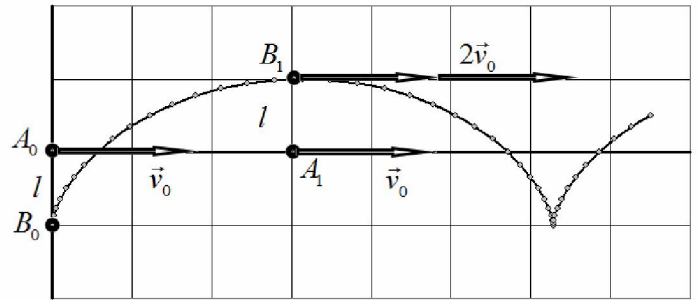
,

B

v_0

v_0 .

Траектория точки B



2.3

B

,

A (

-

A

B_1).

$$v_{\max} = 2v_0.$$

(2)

3.

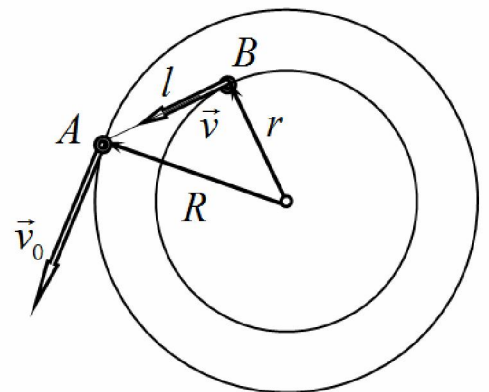
3.1

B

A.

B

A.



3.2

B,

$$r = \sqrt{R^2 - l^2} \approx 5,2 .$$

(3)

3.3

B

$$\frac{v_0}{R} = \frac{v}{r} \Rightarrow v = v_0 \frac{r}{R} \approx 5,2 .$$

(4)

IX

1.

2

9.2.

?

1.

1.1

$$P = \frac{U_0^2}{R}, \tag{1}$$

$$R = \frac{U_0^2}{P} = 484, \tag{2}$$

1.2

$$P_{\Sigma} = P_1 + P_2 = 160. \tag{3}$$

1.3

$$P_{\Sigma} = I^2 R_1 + I^2 R_2 = I^2 (R_1 + R_2). \tag{4}$$

(2):

$$P_{\Sigma} = I^2 (R_1 + R_2) = I^2 \left(\frac{U_0^2}{P_1} + \frac{U_0^2}{P_2} \right) = I^2 U_0^2 \left(\frac{1}{P_1} + \frac{1}{P_2} \right). \tag{5}$$

$$IU_0 = P_{\Sigma},$$

$$\frac{1}{P_{\Sigma}} = \frac{1}{P_1} + \frac{1}{P_2}, \tag{6}$$

$$P_{\Sigma} = \frac{P_1 P_2}{P_1 + P_2} = 37,5. \tag{7}$$

2.

2.1

$$U = IR = \frac{U_0}{R+r} R. \tag{8}$$

2.2

$$\eta = \frac{P}{P} = \frac{I^2 r}{I^2 (R+r)} = \frac{r}{R+r} \tag{9}$$

2.3

$$r = \rho \frac{8L}{\pi d^2} = 216. \tag{10}$$

IX

1.

3

$$R = \frac{U_0^2}{P} = 48,4 \quad (11)$$

(8)

$$U = \frac{U_0}{R+r} R = 40 \quad (12)$$

(9)

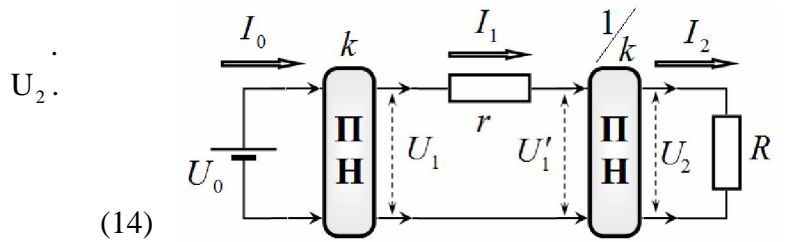
$$\eta = \frac{r}{R+r} = 0,82 = 82\% \quad (13)$$

, 5 , 80% 5 !

3.

3.1

$$I_2 = \frac{U_2}{R}$$



$$P = \frac{U_2^2}{R} \quad (15)$$

$$U'_1 = kU_2, \quad (16)$$

$$U_2 I_2 = U'_1 I_1 \Rightarrow I_1 = \frac{U_2^2}{R \cdot kU_2} = \frac{U_2}{kR} \quad (17)$$

$$U_1 = I_1 r + U'_1 = \frac{U_2}{kR} r + kU_2 = kU_2 \left(1 + \frac{r}{k^2 R} \right) \quad (18)$$

$$U_1 = kU_0 \quad (19)$$

$$kU_2 \left(1 + \frac{r}{k^2 R} \right) = kU_0 \Rightarrow U_2 = \frac{U_0}{1 + \frac{r}{k^2 R}} = U_0 \frac{R}{R + \frac{r}{k^2}} \quad (20)$$

$$I_2 = \frac{U_2}{R} = \frac{U_0}{R + \frac{r}{k^2}} \quad (21)$$

3.2 k (20)-(21) ,
k² .

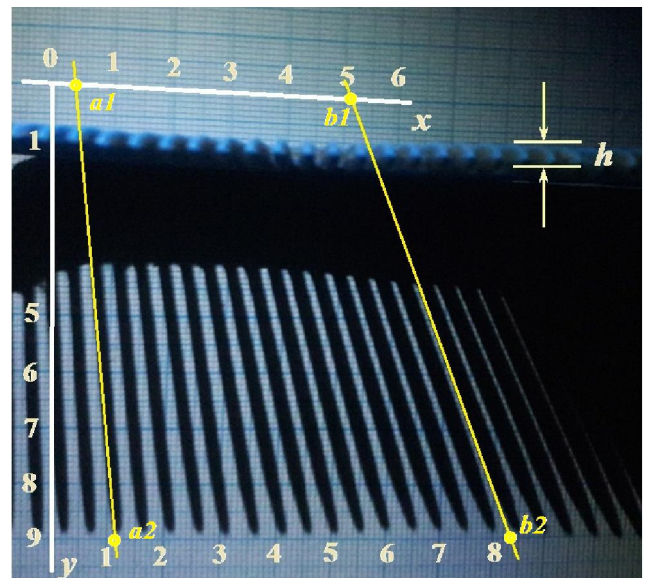
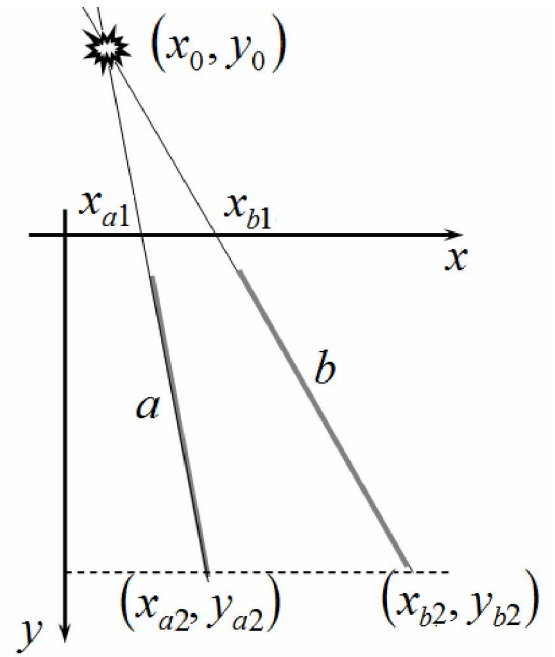
3.3 : (13)

$$\eta' = \frac{r}{k^2 R + r} = 4,5 \cdot 10^{-6} \quad (22)$$

200 ,
!!! 1000

9-3.

a, b -
 (x_0, y_0).
 (x_{a1}, x_{b1}).
 (x_{a2}, y_{a2}),
 (x_{b2}, y_{b2}).



	x,	y,
a1	0,4	0,0
a2	1,1	9,0
b1	5,1	0,0
b2	8,3	9,0

$$y = ax + b$$

(x_1, y_1) (x_2, y_2)

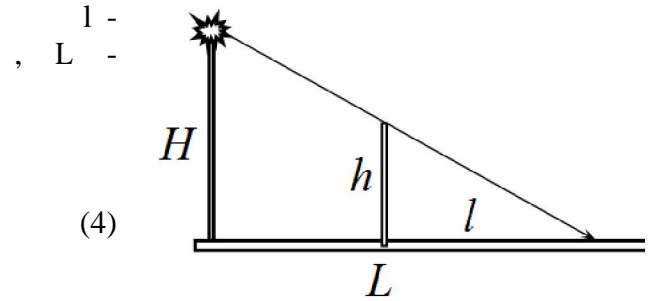
$$a = \frac{y_2 - y_1}{x_2 - x_1} \tag{1}$$

$$b = y_2 - ax_2$$

$$\begin{cases} y = 12,9x - 5,1 \\ y = 2,8x - 14,3 \end{cases} \quad (2)$$

$$\begin{aligned} x_0 &= -0,91 \\ y_0 &= -16,9 \end{aligned} \quad (3)$$

$$\frac{H}{h} = \frac{L}{l}$$



(4) (5) :

$$H = h \frac{y_1 - y_0}{y_2 - y_0} \quad (5)$$

$y_1 = 9,0$, $y_1 = 1,0$,
 $y_0 = -16,9$ -
 (6)

$$H = 6,5 \quad (6)$$