

II ()

II

-3 20 .

1

h.

b.

? -

1).

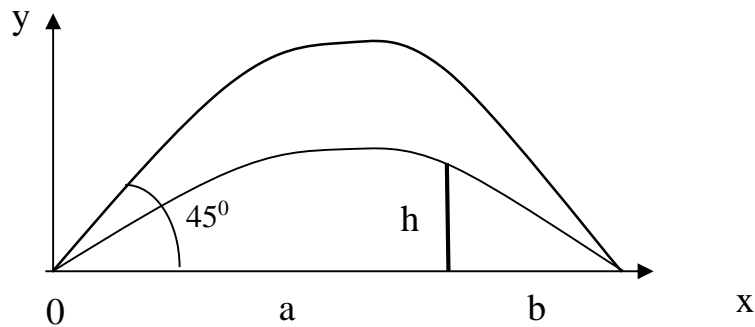
$\alpha = 45^\circ$.

()

($\alpha = 45^\circ$),

a + b.

2).



$$y = t \cdot v_0 \sin \alpha - gt^2/2 \quad x = t \cdot v_0 \cos \alpha \quad y = x \operatorname{tg} \alpha - gx^2 / (2v_0^2 \cos^2 \alpha)$$

$$y = x \operatorname{tg} \alpha - (1 + \operatorname{tg}^2 \alpha) (gx^2 / 2v_0^2)$$

$$x = a+b \quad y = 0, \quad :$$

$$(a+b) \operatorname{tg} \alpha = g (a+b)^2 (1 + \operatorname{tg}^2 \alpha) / 2v_0^2$$

v_0 ,

$$y = x \operatorname{tg} \alpha (1 - x / (a+b))$$

$$x = a \quad y = h \quad h = a \operatorname{tg} \alpha (1 - a / (a+b)) = ab \operatorname{tg} \alpha / (a+b)$$

1)

h_0

,

($\alpha=45^\circ$)

$$: h_0 = ab / (a+b),$$

$$v_0^2 = g (a+b) (1 + \operatorname{tg}^2 \alpha) / 2 \operatorname{tg} \alpha \quad :$$

$$v_{0 \min}^2 = g(a + b)$$

2) $h \uparrow h_0$, $h = ab \operatorname{tg} \alpha / (a+b)$

$$\operatorname{tg} \alpha = h(a+b)/ab \quad v_{0 \min}^2$$

$$v_{0 \min}^2 = \frac{gab}{2h} \left(1 + \left(\frac{h(a+b)}{ab} \right)^2 \right)$$

- 100.

80
50

40

2

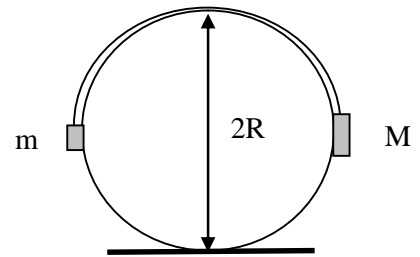
R

m M,

$$L = \pi R.$$

M,
?

m



$$mgR ,$$

$$MgR\pi/2.$$

$$(m + M)v^2/2 = gR(M\pi/2 - m).$$

m

N

$$mg - N = mv^2/R, \quad N = 0,$$

$$mg = mv^2/R \quad v^2 = gR,$$

:

$$(m + M) gR / 2 = gR(M\pi/2 - m) \quad M:$$

$$M = 3m/(\pi - 1)$$

- 80.

60

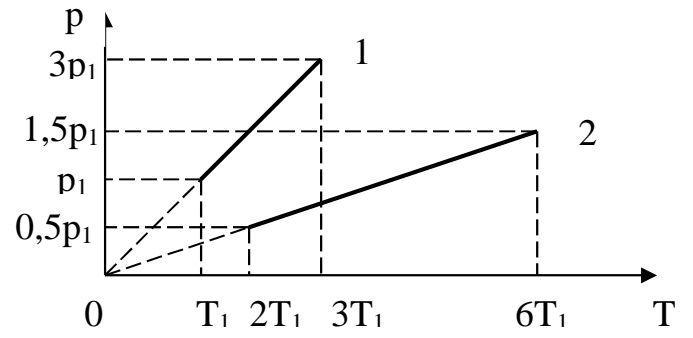
30

3

(. . .)

?

m



$$Q = cm\Delta T$$

, ΔT -

c -

$$Q_1 = cm\Delta T_1 \quad Q_2 = cm\Delta T_2$$

$$\Delta T_1 = 3T_1 - T_1 \quad , \quad \Delta T_2 = 6T_1 - 2T_1, \quad :$$

$$Q_2 / Q_1 = (6T_1 - 2T_1) / (3T_1 - T_1) = 2$$

-60.

40

20

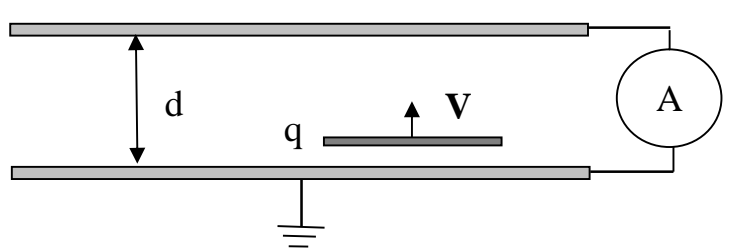
4

(

q.

d.

V)



(

)

(

)

$$\Delta q = q$$

:

$$I = Uq \Delta t$$

$Uq = q, \quad U t \quad t_0$

$$\Delta t = t_0 = \frac{d}{V},$$

$$I = \frac{qV}{d},$$

$$\Delta q = \frac{q \Delta l}{d}$$

10000, $l = 1$, $d = 4$, $l = 1$, $d = 4$, $d = 400$

- 100.

80
50

30

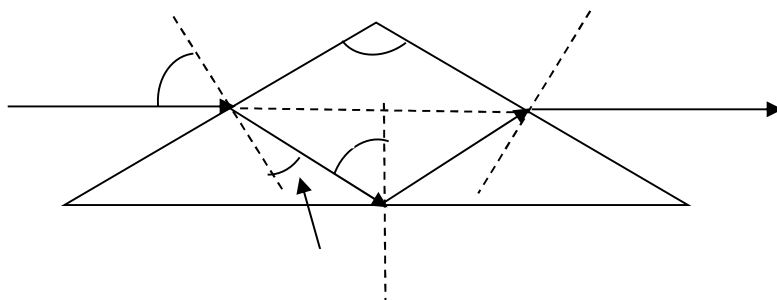
5

()?
= 90°?

(.).

$$\sin x_0 = \frac{1}{n} = \frac{1}{1.495} = 0.669$$

$$x_0 \geq 42^\circ$$



$$= 90^\circ ?$$

1) $\dots = 2$

2) $\dots = 45^\circ$,

3) $\dots = \sqrt{2} - (-) = + \sqrt{2} - \sqrt{2}$

$$\sin S = \frac{\sin r}{n} = \frac{0,707}{1,495} = 0,473 = 28,22^\circ$$
$$= + \sqrt{2} - \sqrt{2} = 73,22^\circ .$$

x_0 , , -

- 80.

60
40

30

$$g = 10 / ^2 .$$

$$n = 1,495$$