11 .

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30 , ( ),
,

60 + 30 = 90 . , h :
$h^2 = 90^2 - 60^2$; h = 67,08 . v_1 v_0
:
$v_1 = v_0 \times \cos = 1 \times 67,08 / 90 = 0,745$ / . .

V = 0,745 / .

2

, u_2 .
v_1 ,
, .
,
, .
, . ,
,
, , . ,

.

:

$$\frac{mv_1^2}{2} = \frac{mu_1^2}{2} + \frac{mu_2^2}{2};\qquad m_1v_1 = m_1u_1 + m_2u_2.\qquad\qquad ,$$

$$:\ u_2 = \frac{2m_1}{m_1+m_2}v_1.\qquad\qquad ,\qquad\qquad : \mathbf{u_2 = 4} \quad / .$$

3

,

,   ,

,

, $\dfrac{16}{16+4}P_0 = 0{,}8P_0;$ –

.   ,   ,

r   ,   r = (16 + 4 + 10)   = 0,3   .

:

$(P_0 - 0{,}8P_0)\times S = $ $LS\times\ ^2r$,   L –   ,   S –

.   , $P_0 = $ gH,   H = 750   = 0,75

,   : gH = ^{2}r,

$\check{S} = \sqrt{\dfrac{gH}{r}} = 5 \quad / .$

4

$$\{_1 = \frac{kq_1}{R_1},\qquad q_1 \quad R_1 -$$

.   ,

.

q_2 :

$$\{_2 = \frac{kq_1}{R_2} + \frac{kq_2}{R_2} = 0.\qquad q_2 = -q_1.$$

$$\{_1 \quad = \frac{kq_1}{R_1} + \frac{kq_2}{R_2} = \frac{kq_1(R_2 - R_1)}{R_1R_2}.$$

,   ,   **6**

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5

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, $: m\vec{g} + \vec{N} + \vec{F}\quad + \vec{F}\quad = 0,$

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,   .

,   –   ,

.

OX : $mgsin\Gamma$ - $IBlcos\Gamma$ - F $= 0$, Γ -

: $N - mg\cos\Gamma - IBl\sin\Gamma = 0$

F $= \mu N$

$I = vcos\ Bl/R$, $R –$.

,   :

$$v = \frac{mgR(\sin\Gamma - \sim\cos\Gamma)}{B^2l^2(\cos^2\Gamma + \sim\sin\Gamma\cos\Gamma)}.$$, $\mathbf{v = 2\ /.}$

,