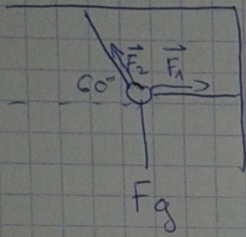


**VAJE** → OD 1 → 15 PRAVE REŠITVE

1.1.  $F = ma \Rightarrow a = \frac{v}{t} \left[ \frac{\frac{m}{s}}{s} \Rightarrow \frac{m}{s^2} \right] \Rightarrow \frac{kgm}{s^2}$

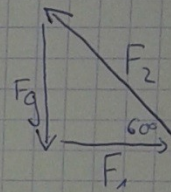
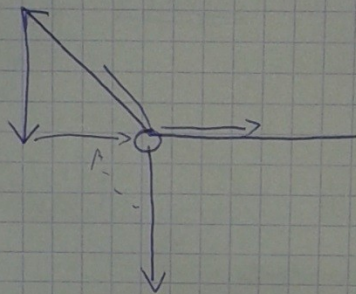
1.2.  $P = \frac{\Delta A}{\Delta t} \dots$

2.1.



$F_1, F_2 = ?$

SESTAVI !



$m = 40 \text{ dog}$   
 $= 0,4 \text{ kg}$   
 $F_g = 4 \text{ N}$

PRILEŽNA  
HIPOTENUZA

$\cos 60^\circ = \frac{F_1}{F_2} \rightarrow$  SLABA  
IZBIRA

NASPROTNA  
HIPOTENUZA

$\sin 60^\circ = \frac{F_g}{F_2}$

$F_2 = \frac{F_g}{\sin 60^\circ}$

$F_2 = 4,6 \text{ N}$

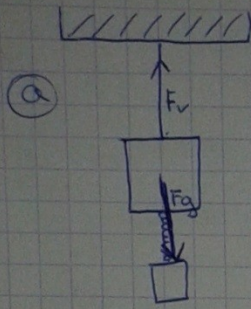
$F_1 = F_2 \cdot \cos 60^\circ$

$F_1 = 2,3 \text{ N}$

2.2.

©  $\vec{F}_a = F_b \checkmark$      $\vec{F}_L = \vec{F}_D \times$   
 $\vec{F}_L = -\vec{F}_D \checkmark$

3.1.



$$F_v = F_g$$

$$\textcircled{b} \quad \underline{\underline{F_g = 4 \text{ N}}}$$

$$\textcircled{c} \quad \underline{\underline{F_{v2} = F_{g2} = 1 \text{ N}}}$$

\textcircled{d}

$$F_{v2} = k \cdot x$$

$$x = \frac{F_{v2}}{k}$$

$$x = \frac{1 \text{ N}}{100 \frac{\text{N}}{\text{m}}} = \underline{\underline{0,01 \text{ m}}}$$

3.2.

Zaradi III newtonoga zakona  
masa nima prese

4.1.

$$a = 30 \text{ cm} = 0,3 \text{ m}$$

$$S = a^2 = 900 \text{ cm}^2 = 0,09 \text{ m}^2$$

$$p = 0,2 \text{ bar} \\ = 20000 \text{ Pa}$$

$$\boxed{F_{\#} = p \cdot S}$$

$$F_{\#} = 20000 \cdot 0,09 \\ = 1800 \text{ N}$$

$$F_g = mg$$

$$m = \frac{F_g}{g}$$

$$\underline{\underline{m = 180 \text{ kg}}}$$

$$\rho = \frac{m}{V}$$

$$\rho = \frac{180}{0,027}$$

$$\underline{\underline{V = a^3 = 0,027 \text{ m}^3}} \quad \rho = 6,667 \frac{\text{kg}}{\text{m}^3}$$

4.2.  $p = \frac{F}{S} \Rightarrow$  sila je enaka v obeh primerih

$\hookrightarrow$  OBRATNO SORAZMERN  $S$  in  $p$

$a \cdot b = 150$

$c \cdot b = 50 \rightarrow$  če je površina 3x manjša je  $p$  3x večji

5.1  $\Delta p = \rho \cdot g \cdot h$

a)  $p = 1000 \frac{\text{kg}}{\text{m}^3} \cdot 10 \frac{\text{m}}{\text{s}^2} \cdot 2500 \text{m}$   
 $= 25000000 \text{ Pa}$

b)  $+ 1 \text{ bar} = 25100000 \text{ Pa}$

c)  $S = (0,2 \text{ m})^2$   
 $= 0,04 \text{ m}^2$

$F = p \cdot S$

$= 0,04 \text{ m}^2 \cdot 25000000 \text{ Pa}$

$= 1000000 \text{ N}$

$\Delta$  ker je 1 BAR tudi v podmornici se upoštevajo

5.2.

D - vsake 10m - 1 bar

G.1.  $V = 30 \text{ dm}^3 \Rightarrow = 0,03 \text{ m}^3$

$\rho = \frac{m}{V}$

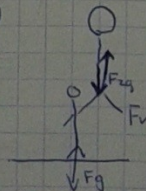
MASA HELISA

a)  $m = \rho \cdot V = 0,16 \cdot 0,03 \text{ m}^3 = 4,8 \text{ g}$  } MASA HELISA

$m = 20 \text{ g} + 4,8 \text{ g} = 24,8 \text{ g} \approx 25 \text{ g} = 0,025 \text{ kg} \Rightarrow F_g = 0,25 \text{ N}$

b)  $F_{vzg} = \rho \cdot g \cdot V$   
 $= 1,2 \text{ kg/m}^3 \cdot 10 \text{ m/s}^2 \cdot 0,03 \text{ m}^3 = 0,36 \text{ N}$

c)



$F_{vzg} = F_v + F_g$

$F_v = F_{vzg} - F_g$

$F_v = 0,36 - 0,25 \text{ N}$   
 $= 0,11 \text{ N}$

1.2 Idealno vzmet stis  
Katera izjava velja za

- a) pri stisku je v
- b) pri raztegu je
- c) v obeh primerih
- d) pri raztegu je

2.1 Za koliko odstotk  
temperaturo 60°C? (t)

2.2  
V prvi posodi vzdu  
mešanico vodne pa  
temperaturama V1

- A 373 K
- B 273 K
- C 273 °C
- D 100 K

3.1 V rezervoarju z  
na prostornino 8 litr  
a) Kolikšen je bil tl  
b) Kolikšna je temp

- 3.2
- Zgibano maso
- tal pomenitja f
- A Tlak pilora
- B Tlak pilora
- C Tlak pilora
- D Tlak pilora

12 PITA

6.2. a

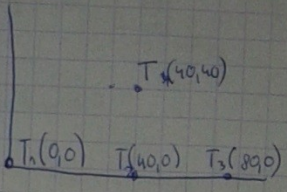
7.1

$$X = \frac{m_1 x_1 + m_2 x_2 + m_3 x_3 + m_4 x_4}{m_1 + m_2 + m_3 + m_4}$$

$$X = \frac{0 + 2 \cdot 40 + 2 \cdot 80 + 3 \cdot 40}{8}$$

$$X = \frac{80 + 160 + 120}{8} = \frac{360}{8} = 45$$

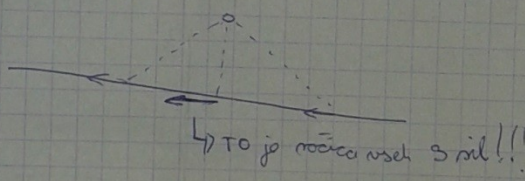
$$Y = m_1 \cdot y_1$$



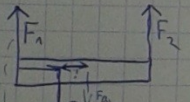
$$\begin{matrix} x = 45 \text{ ov} \\ y = 15 \text{ ov} \end{matrix} \quad T(45, 15)$$

7.2

o - vse tri rili imajo enako ročico!



8.1



$$F_g = 320$$

Določis osiše 0, kjerskali

$$F_1 = 200N$$

$$M_1 = M_2 + M_3$$

(v smeri (v nasprotni smeri vruga)

$$M = F \cdot r$$

$$M_1 = F_1 \cdot 3,6m = 200N \cdot 3,6m$$

$$720 = 576x + 576$$

$$x = 0,25 \text{ X}$$

$$x = 0,12 \text{ m ov}$$

$$M_2 = F_2 \cdot r = 320N \cdot (1,8 + x)$$

polovica trama + ročica

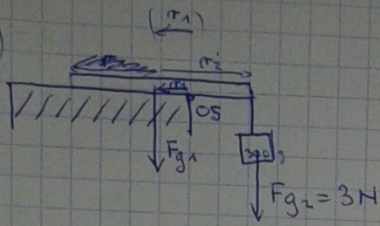
$$M_3 = F_3 \cdot r = 320 \cdot 1,8 \text{ (POLOVICA TRAMA)} = 576$$

8.2. D

KAJDALIŠA ROČICA

na iz osnovnih  
loravnico kot 60  
s obroček s  
v zvezi s  
Katera od  
na tm stroga  
10 v tm tm f  
kateri?!

9.1.



$$M_1 = M_2$$

$$M_1 = F_{g1} \cdot r_1 = 0,3 \text{ m}$$

$$M_2 = F_{g2} \cdot r_2$$

$$F_{g1} \cdot r_1 = F_{g2} \cdot r_2$$

$m = 0,2 \text{ kg}$

9.2. DA/NE/DA/DA

10.1.

$$t = 1 \text{ s}$$

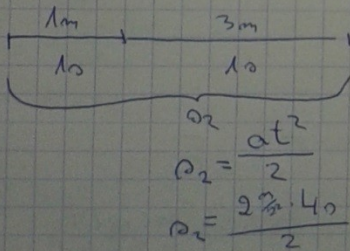
$$s = 1 \text{ m}$$

$$s = v_0 \cdot t + \frac{at^2}{2}$$

$$a = \frac{\Delta v}{t}$$

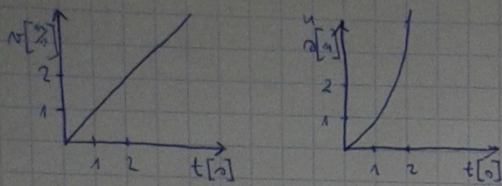
$$a = \frac{2s}{t^2}$$

$$a = 2 \text{ m/s}^2$$



Primer  
 Za 2 sekunde računaj od začetka, od čez je kolikor računam = 0

$$s_2 = 4 \text{ m} \Rightarrow \text{v drugi sekundi naredi } 3 (s_2 - s_1) \text{ m}$$



10.2. <sup>PREMO-PRIMICO</sup> NE<sub>a</sub>, DA<sub>b</sub>, NE<sub>c</sub>, DA<sub>d</sub>, DA<sub>e</sub>, NE<sub>f</sub>, DA<sub>g</sub>, NE<sub>h</sub>, NE<sub>i</sub>

11.1.

$$a = \frac{v}{t} = \frac{15 \frac{m}{s}}{4s} = 3,75 \frac{m}{s^2}$$

$$s_1 = \frac{at_1^2}{2} = \frac{3,75 \cdot 16}{2} = 30m$$

$t = t_1 + t_2$

POSPEŠENO GIBANJE

$$s_2 = 150 - 30 = 120m$$

$$s_2 = s - s_1$$

pot enakomernega gibanja

$$t_2 = \frac{120m}{15 \frac{m}{s}} = 8s$$

ENAKOMERNO

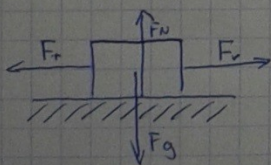
$$t = t_1 + t_2 = 12s$$

11.2. (D) hitrostre in časom opravi  $v = \frac{L}{t}$   
 $v = at$

12.1.

$$m = 600g \Rightarrow 0,6kg \Rightarrow F_g = 6N$$

$$k_s = 0,56$$



(a)  $v = 6 \frac{m}{s}$

$$F_t = F_v$$

$$F_t = k F_N$$

$$F_t = 0,56 \cdot 6N$$

$$= 3,36N$$

(b)  $a = 2 \frac{m}{s^2}$

$$3F_t = m a$$

$$F_v - F_{te} = m a$$

$$F_v = m a + F_{te}$$

$$= 4,56N$$

12.2. (A)

13.1

$$r = 20 \text{ cm} = 0,2 \text{ m}$$

$$v = 90 / \text{min} = 1,5 \text{ s}^{-1}$$

$$t_0 = \frac{1}{v} = \frac{1}{1,5} = 0,667$$

$$\omega = 2\pi v = 9,52 \text{ s}^{-1}$$

$$\omega = \frac{2\pi r}{t_0} ?$$

$$v = r \cdot \omega = 0,2 \text{ m} \cdot 9,52 = 1,9 \frac{\text{m}}{\text{s}}$$

13.2 (A)

14.1

$$m = 10 \text{ kg}$$

$$v_1 = 54 \frac{\text{km}}{\text{h}} = 15 \frac{\text{m}}{\text{s}}$$

$$v_2 = 162 \frac{\text{km}}{\text{h}} = 45 \frac{\text{m}}{\text{s}}$$

$$t = 30 \text{ s}$$

SUNK SILE  
 $F_{\Delta t}$

a)  $G_1 = m \cdot v_1 = 150 \frac{\text{kgm}}{\text{s}}$   
 $G_2 = m \cdot v_2 = 450 \frac{\text{kgm}}{\text{s}}$

b) SUNK SILE  
 $F_{\Delta t} = ?$

$$F_{\Delta t} = \Delta G$$

c)  $F = \frac{\Delta G}{\Delta t}$   
 $= \frac{300 \frac{\text{kgm}}{\text{s}}}{30 \text{ s}}$   
 $= 10 \text{ N}$

$$\Delta G = G_2 - G_1$$
$$= 450 - 150$$
$$= 300 \frac{\text{kgm}}{\text{s}}$$

$$F_{\Delta t} = 300 \frac{\text{kgm}}{\text{s}}$$

d)  $t = 1 \text{ min} = 60 \text{ s}$   
 $v_2 = 162 \frac{\text{km}}{\text{h}} \Rightarrow 45 \frac{\text{m}}{\text{s}}$   
 $v_1 = 0$

$$F_{\Delta t} = \Delta G$$

$$\Delta G = G_2 - G_1 \Rightarrow \Delta G = m v_2 - m v_1$$

$$\Delta G = m v_2 = -450 \frac{\text{kgm}}{\text{s}}$$

$$F = \frac{\Delta G}{\Delta t}$$
$$= -7,5 \text{ N}$$

c)  $m_1 = 0,1 \text{ kg}$   
 $m_2 = 10 \text{ kg}$   
 $v_1 = 60 \frac{\text{m}}{\text{s}}$   
 $v = ?$

ZAKON O OHRANITVI GIBALNE KOLIČINE

$$G_{\text{PRED}} = G_{\text{PO}}$$

$$m_1 \cdot v_1 = (m_1 + m_2) \cdot v_2$$

~~$10 \text{ kg} \cdot 60 \frac{\text{m}}{\text{s}} = 10,1 \text{ kg} \cdot v_2$   
 $\frac{600}{10,1} = 59,4$~~

Ker se metek zavrine  
 v kladu upoštevamo  
 skupno maso

$$0,1 \cdot 60 = (10 + 0,1) \cdot v_2$$

$$\frac{6}{10,1} = \frac{60}{v_2} \cdot v_2$$

$$v_2 = 0,59 \frac{\text{m}}{\text{s}}$$

14,2. c)

gibalna pred = gibalna po

hitrost je vektor zato c) in ne d)

$m_1 v_1 - m_2 v_2$  —  $v_2$  je negativen in zato pride v  
 nasprotni smeri!



15.1

$$m = 6 \text{ kg}$$

$$v_2 = 3 \text{ m/s}$$

$$v_1 = 0$$

$$s = 10 \text{ m}$$

$$k = ?$$

$$F_{\text{tr}} = F_N \cdot k$$

ZAKON O MEHANSKI ENERGIJE

$$A = \Delta W_k + \Delta W_A + \Delta W_P$$

⚡

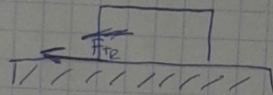
$$A = \Delta W_k$$

$$= W_{k2} - W_{k1}$$

$$= W_{k1} \Rightarrow W_{k1} = \frac{m \cdot v_2^2}{2}$$

$$= -27 \text{ J}$$

$$= 27 \text{ J}$$



$$A = F \cdot s$$

$$-27 \text{ J} = -F_T \cdot s$$

DELO OPRAVILA SILA OPRAVILA NEGATIVNO DELO

$$27 \text{ J} = F_T \cdot s$$

$$F_T = \frac{27 \text{ J}}{10 \text{ m}}$$

$$F_T = 2,7 \text{ N} \Rightarrow F_T = k F_N \Rightarrow \boxed{F_T = k F_g}$$

$$k = \frac{F_T}{F_N} \Rightarrow F_N = F_g$$

$$k = \frac{2,7 \text{ N}}{60 \text{ N}}$$

$$k = 0,045$$

15.2 (B)

$$W_k = \frac{m \cdot v^2}{2} \rightarrow \left( v = \frac{s}{t} \right) \left( a \cdot t = v \right)$$

$$v^2 = \frac{s^2}{t^2}$$

energija

16.1.  $v = 700 \frac{m}{s}$

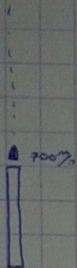
$m = 10g$

$W_k = W_p$

$$\frac{mv^2}{2} = mgh$$

$$\frac{v^2}{2g} = h$$

$$\frac{(700 \frac{m}{s})^2}{20 \frac{m}{s^2}} = \underline{\underline{24500 m}}$$



ⓑ 12-ročni upor

$W_z \neq W_p$

$W_z + F_v \cdot h$

SILA UPORA

$\boxed{\text{DELO UPORA}} = \nabla$  ubrada zata

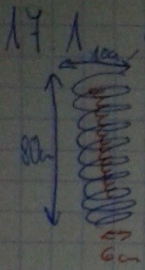
$F_s = 0,1 N$

$F_v = 0,01 N$

16.2.

ⓓ

$$P = \frac{A}{t} \Rightarrow \boxed{t = \frac{A}{P}}$$



VELIKA TULJAVA:

100 ovojnic

1000 ovojnic

VELIKA TULJAVA:

$$I = 2,0 \text{ A}$$

$$l_1 = 0,8 \text{ m}$$

$$d_2 = 0,1 \text{ m} \Rightarrow r = 0,05 \text{ m}$$

$$N_1 = 100$$

ME ZA IZPIT

MALA TULJAVA:

$$d_2 = 0,06 \text{ m}$$

$$N_2 = 1000$$

KONSTANTA  
MAGNETNEGA  
POLJA V TULJAVI

$$B_1 = \frac{\mu_0 \cdot I \cdot N_1}{l_1}$$

$$= \frac{4\pi \cdot 10^{-7} \cdot 2,0 \text{ A} \cdot 100}{0,8 \text{ m}}$$

$$= \underline{\underline{31,4 \cdot 10^{-3} \text{ T}}}$$

INDUCIRANA NAPETOST

$$U = \frac{\Delta \Phi}{\Delta t} \rightarrow \text{INDUKCIJSKI ZACON}$$

$$U \Delta t = \Delta \Phi \rightarrow \text{spremenila magnetnega pretoka}$$

SUNEK  
NAPETOST

INDUCIRANA  
NAPETOST  $\cdot \Delta t$

Let v veliki voltopni

$$\Delta \Phi_m = \Phi_{2m} - \Phi_{1m}$$

$$\Delta \Phi = -\Phi_{1m}$$

$$\Phi = N \cdot B \cdot S$$

$$\Phi_{m2} = N_2 \cdot B_1 \cdot S_2$$

$$S_2 = \pi r^2$$

$$1000 \cdot 31,4 \cdot 10^{-3} \cdot \cancel{0,01} \text{ m}^2$$

$$= 2,8 \cdot 10^{-3} \text{ m}^2$$

$$\Phi_{m2} = 1000 \cdot 31,4 \cdot 10^{-3} \cdot 2,8 \cdot 10^{-3}$$

$$= \underline{\underline{0,0089 \text{ Wb}}}$$

17.2

IZPIT!

4 KRAT

Prizrednja snacila pri magnetnem

$$W_m = \frac{L I^2}{2}$$

tal podvojimo  $L(4I)^2 = 4 \frac{L(4I)^2}{2} = 4$

## VASE 2. DEL $\Rightarrow$ PRESITVE

1.1.

$$m_v = 10g = 0,01 \text{ kg}$$

$$k_v = 2, \text{ N/cm} \Rightarrow 200 \frac{\text{N}}{\text{m}}$$

$$x = 1 \text{ cm} = 0,01 \text{ m}$$

$$W_{pz} = W_k = W_p$$

$$W_{pz} = \frac{kx^2}{2} = \frac{200 (0,01)^2}{2} = \underline{\underline{0,01 \text{ J}}}$$

$$W_{pz} = W_p \Rightarrow 0,01 \text{ J} = mgh$$

$$\frac{0,01}{0,01 \cdot 10} = h$$

$$\underline{\underline{h = 0,1 \text{ m}}}$$

ZA 16. NAVOGE

IZENACIS

$$W_k = W_p$$

1.2. (c)

ker je  $x^2$  nima znaka a je nastal negativen ali pozitiven.

2.1.

$$l = 1 \text{ m}$$

$$T_1 = -20^\circ\text{C} = 253 \text{ K}$$

$$T_2 = 60^\circ = 333 \text{ K}$$

$$\alpha = 1,2 \cdot 10^{-5} \text{ K}^{-1}$$

$$\Delta T = 80 \text{ K}$$

$$\frac{\Delta l}{l} = \alpha \cdot \Delta T$$

$$\Delta l = \alpha \cdot \Delta T \cdot l$$

$$= 1,2 \cdot 10^{-5} \cdot 80 \cdot 1$$

$$= \underline{\underline{96 \cdot 10^{-6} \text{ m}}}$$

$$\underline{\underline{0,096 \text{ cm}}}$$

$$\Delta l = l_k - l_2$$

$$l_k = 0,096 \text{ cm} + 100 \text{ cm}$$

$$= 100,096 \text{ cm}$$

$$\frac{100}{100,096} \dots x\%$$

$$100x = 100096$$

$$x = 100,096\%$$

$$x_p = 0,096\%$$

2.2 (d)

3.1  $V = 5\text{ l} \Rightarrow 0,005\text{ m}^3$

$m_2 = 200\text{ g} = 0,2\text{ kg}$

$T = 23^\circ\text{C} \Rightarrow 296\text{ K}$

SPLOŠNA  
PLINSKA  
ENACĀBA

$pV = mRT$

$m = \frac{m}{M}$

$pV = \frac{m}{M} RT$

$p = \frac{mRT}{MV}$

$p = \frac{0,2 \cdot 8310\text{ J} \cdot 296\text{ K}}{0,005 \cdot 29}$

$p = 3392000\text{ Pa}$

PLINSKA ENACĀBA

$\frac{pV}{T} = \frac{p_0V_0}{T_0}$

IZOBARNĀ SPREMEMA

$\frac{pV}{T} = \frac{p_0V_0}{T_0}$

$V_0T = T_0V$

$T = \frac{VT_0}{V_0}$

$\frac{0,008\text{ m}^3 \cdot 296\text{ K}}{0,005\text{ m}^3} =$

$= 473\text{ K}$

~~3.1~~

3.2. (B)

(IZOMERNA SPREMEMBA)

$p \cdot V = \frac{m}{M} RT$

$m = p \cdot V$

$p \cdot V = \frac{p \cdot V}{M} RT$

$p = \frac{pM}{RT}$

FIZIKA PM  
FIZIKA RTM

4.1.

POT. ZA IZPIT

$$r_0 (\text{iz slike}) = 1,5 \text{ cm} = 0,015 \text{ m}$$

$$f = \frac{1}{t_0} (\text{iz slike}) = \frac{1}{12_0} = 0,08_0^{-1} = \underline{\underline{0,08 \text{ Hz}}}$$

$$V_0 = r_0 \omega \rightarrow \omega = 2\pi f$$

$$V_0 = 1,5 \cdot 2\pi \cdot 0,08$$

$$V_0 = \cancel{0,015 \cdot 2\pi \cdot 0,08}$$

$$0,015 \cdot 2\pi \cdot 0,08$$

$$= \underline{\underline{7,5 \cdot 10^{-3} \frac{\text{m}}{\text{s}}}}$$

4.2.

(B)

5.1.

$$m = 260 \text{ g} \Rightarrow 0,26 \text{ kg}$$

$$r_0 = 15 \text{ cm} = 0,15 \text{ m}$$

$$f = 2 \text{ Hz}$$

(a)

$$V_0 = r_0 \omega (2\pi f)$$

$$= 0,15 \cdot 4\pi \text{ Hz}$$

$$= 4,88 \frac{\text{m}}{\text{s}}$$

5.2. (B)

$$t_0 = 2\pi \sqrt{\frac{2m}{k}}$$

(b)

$$t_0 = 2\pi \sqrt{\frac{m}{k}}$$

$$\sqrt{\frac{m}{k}} = \frac{t_0}{2\pi}$$

$$\frac{m}{k} = \left(\frac{t_0}{2\pi}\right)^2$$

$$k = \frac{m}{\left(\frac{t_0}{2\pi}\right)^2} \quad k = 41,06 \frac{\text{N}}{\text{m}}$$

enačba za nihanje

GIBANJE

zadnje 3 formule

~~merilis~~ merilis smat  
cos in

to jih pokrives

ker računamo le ravnovesni

in skrajno lego

\* hitrost v ravnovesni legi  
je največja

(nihanje in ravnovesni  
1. značka)

6.1.  $\lambda = 12 \text{ cm}$  (valovna dolžina)  
 je od hriba do hriba

$$x_1 = \frac{\lambda}{4} = \underline{\underline{3 \text{ cm}}}$$

$$x_2 = 3 \frac{\lambda}{4} = \underline{\underline{9 \text{ cm}}}$$

- 6.2. (a) uklon  
 (b) lom  
 (c) odboj

7.1.  $\alpha = 45^\circ$  (vpadni kot)

$n_1 = 1,33$   
 $n_2 = 1$

lomni koeficient  
 zraka

lomni kot  $\beta$

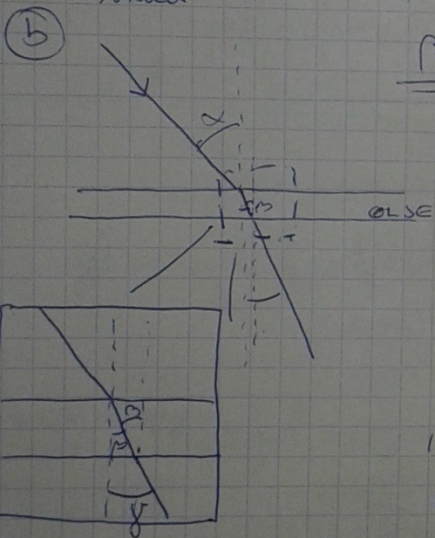
$$n = \frac{c_0}{c}$$

$$n_1 \sin \alpha = n_2 \sin \beta$$

$$\frac{\sin \alpha}{\sin \beta} = \frac{n_1}{n_2}$$

$$\sin \beta = \frac{n_1 \cdot \sin \alpha}{n_2}$$

$$\beta = 32^\circ$$



IZ ZRAKA V OZRAČJE

$$n_1 \sin \alpha = n_2 \sin \beta$$

$$1 \cdot \sin 45^\circ = 1,45 \sin \beta$$

$$\sin \beta = \frac{1 \sin 45^\circ}{1,45}$$

$$\beta = 29,2^\circ$$

IZ OZRAČJA V VODO

$$n_1 \sin \beta = n_2 \sin \gamma$$

$$\sin \gamma =$$

$$\gamma = 32,1^\circ$$

IZ KATERE  
 PRIDEMO  $n_1$   
 V KATERO  
 GREMO  $n_2$

7.2. (B) Definijski uklon

Vzmet z maso 10 g in  
 kšne višine lahko odsl  
 identno vzmet stisne  
 era izjava velja za spr  
 a) pri stisku je večji  
 b) pri raztegu je ve  
 c) v obeh primerih  
 d) pri raztegu je na  
 Za koliko odstotkov  
 penituro 60°C? (ten  
 prvi posodi vzdi za  
 samico vodne par  
 aperturama v pr  
 373 K  
 273 K  
 273 °C  
 100 K  
 v rezervoarju z v  
 rostornino 8 litr  
 oljksen je bil tla  
 oljksna je temp  
 Zlozato maso  
 sprememba p  
 Tlak plovca  
 Tlak plovca  
 Tlak plovca

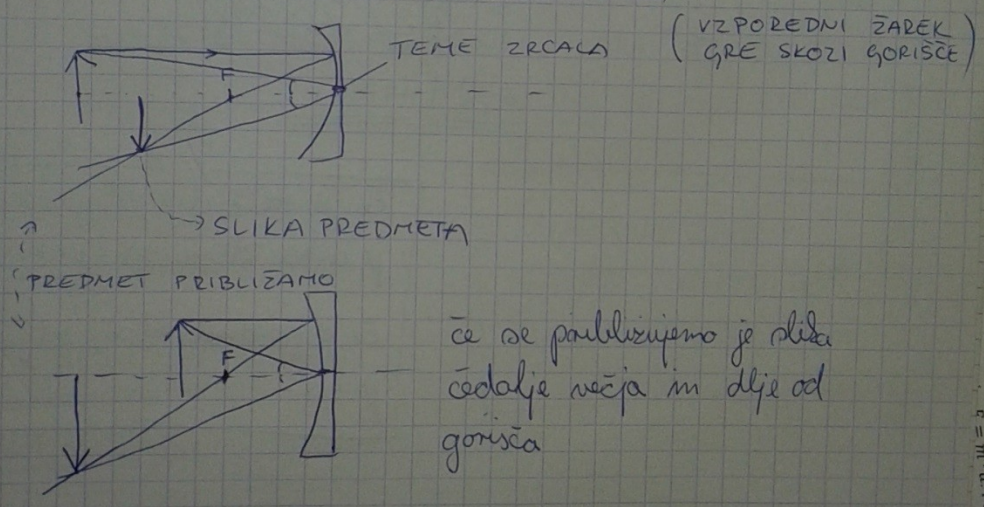
8.1. KONKAVNA = RAZPRŠILNA → GORIŠČNA RAZ. je NEGATIVNA in b je NEGATIVEN

$a = 0,5 \text{ m}$   
 $f = 0,20 \text{ m}$   
 $\frac{1}{a} - \frac{1}{b} = -\frac{1}{f}$   
 $\frac{1}{0,5} - \frac{1}{b} = -\frac{1}{0,20}$

$\frac{1}{a} + \frac{1}{b} = \frac{1}{f}$   
 $\frac{1}{a} - \frac{1}{b} = -\frac{1}{f}$  konveksno / vrcalo / leca  
 FORMULA ZA RAZPRŠILNE ZADEVE

$\frac{1}{0,5} + \frac{1}{0,2} = \frac{1}{b}$   
 $\frac{7}{4} = \frac{1}{b} \Rightarrow b = \frac{4}{7} = b = 0,57 \text{ m}$

8.2. KONKAVNO ZRCALO je ZBIRALNO (kontra kot pri leci)





9.1 KONKAVNO ZRCALO JE ZBIRALNO  
 KONKAVNA LEČA JE RAZPRŠILNA

$$a = 30 \text{ cm} \Rightarrow 0,3 \text{ m}$$

$$M = 2,5 \text{ (povečava)}$$

$$\left| \frac{b}{a} \right| = M$$

$$b = 2,5 \cdot 0,3 \\ = 0,75 \text{ m}$$

~~KITILE~~  
~~PROBLEM~~  
~~VITH~~  
~~BOSS~~

POLMER je 2x gorišča

$$R = 2f$$

$$\frac{1}{f} = \frac{1}{a} + \frac{1}{b}$$

$$f = \frac{ab}{a+b}$$

$$= \frac{2250}{105} = \cancel{21,42857}$$

$$= \underline{\underline{21,4 \text{ cm}}}$$

če damo predmet  
 bližje  $f$  je  $b$  negativen  
 (za drugi rezultat)

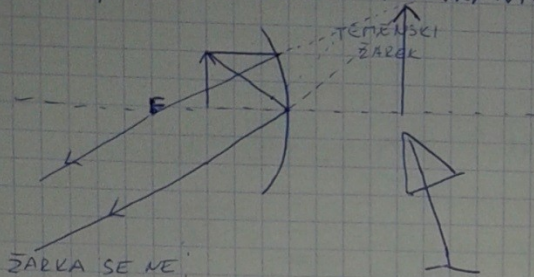
9.2 A

če je  $a > b$  dlje od gorišča  
 je slika REALNA  $b = +$

če je predmet bližje od gorišča  
 je  $b = -$

# 10.1. GRE ZA KAKNA KONKAVNO ZRCALO

(KONVEKSNJA SO V KREŽIŠČIH)



V SALONIH  
SITI BLIŽJE  
OD GORIŠČNE  
RAZDALJE

ŽARKA SE NE SREČATA ZATO SLIKA NA STANE V ZRCALU POVEČANA!

$$R = 2f$$

$$a = 20 \text{ cm POVEČAVA } (M = \frac{b}{a})$$

$$\frac{b}{a} = 1,33$$

$$b = 20 \cdot 1,33$$

$b = 26,6 \Rightarrow b$  je NEGATIVEN KER SE OBJEKT  
BLIŽJE ZRCALU KOT GORIŠČE

$$\frac{1}{f} = \frac{1}{a} + \frac{1}{b}$$

$$\frac{1}{f} = \frac{1}{20} - \frac{1}{26,6}$$

$$f = 80,6 \text{ cm}$$

$$R = 161,2$$

NAVIDEZNO  
SLIKO VIDIMO V  
ZRCALU m je b-

## 10.2. NEPRAVILNO

11.1.

$$t = 8 \text{ min} = 288000 \text{ s}$$

$$I = 100 \text{ mA} = 0,1 \text{ A}$$

$$e = ?$$

$$I = \frac{e}{t}$$

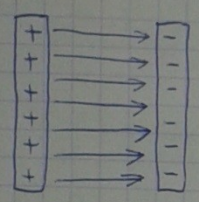
$$e = I \cdot t$$

$$= 0,1 \cdot 28800$$

$$= \underline{\underline{2880 \text{ A s}}}$$

11.2. (B)

12.1.



$$U = E \cdot d \rightarrow E = \frac{U}{d}$$

$$E = \frac{5000 \text{ V}}{0,05 \text{ m}}$$

$$= \underline{\underline{100000 \text{ V/m}}}$$

(B)  $\frac{e}{S} \rightarrow \frac{e}{S} = E \epsilon_0 \leftarrow \left[ E = \frac{e}{\epsilon_0 \cdot S} \right]$  je na formuli a v drugi obliki  $\left[ E = \frac{e}{2\epsilon_0 S} \right]$

$$\frac{e}{S} = 100000 \text{ V/m} \cdot 8,9 \cdot 10^{-12} \text{ A s/V} / 8,9 \cdot 10^{-12} \text{ A s/V}$$

$$= \underline{\underline{8,9 \cdot 10^{-7} \text{ A s/m}^2}}$$

$\frac{e}{S} = \text{POVRŠINSKA GOSTOTA}$

$$\frac{e}{2\epsilon_0 S} + \frac{e}{2\epsilon_0 S} = \text{ZA ENO PLOŠČO}$$

$$= \frac{e}{\epsilon_0 \cdot S} \text{ ZA DVE PLOŠČI}$$

✓

12.2.

(D)  $E = \frac{U}{d}$   
 edina smiselna ostalo sam spominjajo

13.1

$$R_1 = 1 \Omega$$

$$R_2 = R_3 = 2 \Omega$$

$$U = 4,0 \text{ V}$$

$$P = \frac{U^2}{R}$$

(moč)

POTREBUJEMO  
SKUPNI  
UPOR

\* vedno se upieni prava  
v vzporedni del

PRI ZAPOREDNI UPOR  
SE SEŠTEVAJO

PRVO SKUPNI UPOR  
 $R_2$  in  $R_3$

$$\frac{1}{R_{s1}} = \frac{1}{R_2} + \frac{1}{R_3}$$

SKUPNI  
UPOR

$$\frac{1}{R_{s1}} = \frac{1}{2} + \frac{1}{2}$$

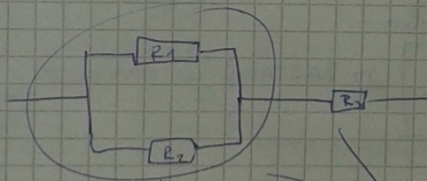
$$R_{s1} = 1 \Omega$$

$$R_s = R_1 + R_{s1} = \underline{\underline{2 \Omega}}$$

$$P = \frac{U^2}{R} = \frac{4^2}{2} = \underline{\underline{8 \text{ W}}}$$

13.2

ISTI ŠTOS



$$\frac{1}{R_{s1}} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$\frac{1}{R_{s1}} = \frac{1}{10} + \frac{1}{10}$$

$$\frac{1}{R_{s1}} = \frac{2}{10}$$

$$R_{s1} = \underline{\underline{5 \Omega}}$$

$$R_{s1} + R_3 = R_s$$

$$R_s = \underline{\underline{15 \Omega}}$$

14.1.

$$U = 0,6 \text{ V}$$

$$I = 1,6 \text{ A}$$

$$R = \frac{U}{I}$$

$$R = \frac{0,6}{1,6}$$

$$R = 0,375 \Omega$$

SPECIFICNA UPORABA

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

v enačbah

?  $R = \frac{\rho l}{S}$  - presek žice

$$S = \frac{R \rho l}{d}$$

$$S = \frac{0,375 \cdot 0,28}{12}$$

$$= 8,8 \cdot 10^{-3} \frac{\Omega \cdot \text{mm}^2}{\text{m}}$$

PUŠTIS MILIMETRE

~~$$S = \pi r^2$$~~

$$S = \pi \cdot 0,30^2$$

$$= 0,28 \text{ mm}^2$$

PAZI NA

PREMER/POLMER

14.2.

(D)  
4R

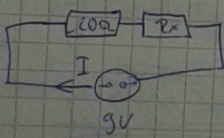
presek je obrn

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

⇒ ZASTAVIŠ IN VPIŠIŠ DA JE

15.

IZPITNA



$$I = \frac{l}{t} = 0,2 \text{ A}$$

TOK V VEZSU

$$U = R_s I$$

$$R_s = \frac{9 \text{ V}}{0,2 \text{ A}}$$

$$= 45 \Omega$$

$$\Rightarrow R_x = 25 \text{ } \Omega$$

VEDNO SEVPNI UPOR

15.2

NE

NE (površinski presek?)

DA

DA OHMOV ZAKON VR!

$$R_s = R_1 + R_2$$

ser sta  
zaporedna  
vezana se  
enostavna sestava

16.1.

ALMA - specifični upor

$$\rho = \frac{R \cdot S}{d}$$

$$R = \frac{U}{I} = \frac{5V}{3A} = 1,66 \Omega$$

$$\rho = \frac{1,66 \cdot 28}{30} =$$

~~$$1,25664 \frac{\Omega \cdot \text{mm}^2}{\text{m}}$$~~

$$= 0,155 \frac{\Omega \cdot \text{mm}^2}{\text{m}}$$

PAZI PRESEK  
PRESEK

$$B = \frac{\mu_0 \cdot N \cdot I}{d}$$

$\mu_0$  - INDUKCIJSKA KONSTANTA      INDUKCIJSKA (MAGNETNA) KONSTANTA je podana v enačbah

$$= \frac{1,25664 \cdot 10^{-6} \cdot 100 \cdot 3}{0,3}$$

$$1,25664 \cdot 10^{-3} \text{ T}$$

$$\Phi = N \cdot B \cdot S$$

$$= 8,98 \cdot 10^{-4} \text{ Vs}$$

PRETOK

$$S = \pi r^2$$

$$2\pi r = N = d \cdot \pi$$

TULJAVO



toliko ovijev (N)

toliko "obsegov" na tulfavi

$$S = 7,148 \cdot 10^{-3} \text{ m}^2$$

$$= 0,078 \text{ m}^2$$

$$r = \frac{d}{2\pi N}$$

$$r = 0,0477 \text{ m}$$

$$S = 0,0078 \text{ m}^2$$

(d) INDUKCIJSKI ZAKON  $\Rightarrow$  Kako dolimo elektromo, (resenje abstrak)

$$U_i = \frac{\Delta \Phi}{\Delta t}$$

$$\Rightarrow \Delta \Phi = \Phi_2 - \Phi_1 \quad (\text{pretoka ni na tej strani})$$

$$= -8,98 \cdot 10^{-4}$$

$$t = 0,01 \text{ s}$$

$$U = 0,0898 \text{ V}$$

elektr. princip elektrom. je toz ni tolo

16.2.  
Ⓐ

INDUKTIVNOST → geometrijske lastnosti tuljave

$$L = \frac{\mu_0 \cdot N^2 \cdot S}{d}$$

daljina  
površina

$N^2$  ima naprave vpliv

če je navojen enako

pa pogledas površino...

16. NI TREBA

INDUKCIJE NA IZPITU NE BO

$$U_i = \frac{\Delta \Phi}{\Delta t}$$

$$\Phi = NBS$$

$$\xi = \frac{RS}{l}$$

$$\downarrow$$

$$\pi r^2$$

$$B = \frac{\mu_0 NI}{l}$$

$$N \cdot 2\pi r = l_2$$

FORMULE ZA INDUKTIVNOST

NI NA FORMULAH  
STENLO NAVOJEN

$$L = \frac{\mu_0 N^2 S}{l} \quad \text{PRESEKTU}$$

16.2.

(A)

17.1.

$$L = 5 \text{ mH} = 0,005 \text{ H}$$

$$D = 1,0 \text{ kHz} = 1000 \text{ Hz}$$

$$C = ?$$

$$v = \frac{1}{t_0}$$

$$t_0 = \frac{1}{v} = 0,001 \text{ s}$$

$$v = \frac{1}{t_0} = \frac{1}{2\pi \sqrt{LC}}$$

$$t_0 = 2\pi \sqrt{LC} \quad \text{LC-KARAKTER}$$

$$C = \frac{t_0^2}{4\pi^2 L} = \underline{\underline{0,000005 \text{ F}}}$$

17.2.

(B)



18.1.  $N = 500$

$2r = 0,02 \text{ m}$

$2r \cdot 2R = 4 \text{ cm} = 0,04 \text{ m} = 2r \Rightarrow S = \pi r^2 \quad S = 1,26 \cdot 10^{-3}$

$l = 15 \text{ cm} = 0,15 \text{ m}$

$S = 100 \text{ cm}^2 = 0,01 \text{ m}^2$

$d = 0,15 \text{ mm} =$

$v = \frac{1}{2\pi \sqrt{LC}} \quad v = \frac{1}{t_0}$

$L = \frac{\mu_0 N^2 S}{l}$  KONSTANTA I NA FORMULAM

$= \frac{4\pi \cdot 10^{-7} \cdot 500^2 \cdot 1,26 \cdot 10^{-3}}{0,15}$

$= 2,64 \cdot 10^{-3} \text{ H}$  (henri enota sa milidobro)

$C = \frac{\epsilon_0 \cdot S}{d} = \frac{8,85 \cdot 10^{-12} \cdot 0,01 \text{ m}^2}{0,0005}$

$= 1,77 \cdot 10^{-10} \text{ Fa}$  (farada)

$v = \frac{1}{2\pi \sqrt{LC}}$

$= \frac{1}{2\pi \sqrt{2,64 \cdot 10^{-3} \cdot 1,77 \cdot 10^{-10}}}$

$v = 23151 \text{ Hz}$

18.2.

(B)

18.1) [IZ PRVE A SKUPINE]

$$U_1 = 240 \text{ v}$$

$$N_1 = 400 \text{ obr/min}$$

$$U_2 = 12 \text{ v}$$

$$\frac{U_1}{U_2} = \frac{N_1}{N_2} \quad \text{formula}$$

$$N_2 = \frac{N_1 \cdot U_2}{U_1}$$

$$N_2 = \frac{400 \cdot 12}{240}$$

$$\underline{\underline{N_2 = 20}}$$

18.2.

(A)

17.11

Do G piše iz teorije

pišim na google SIMON ULEN - ATELJE ZNANJA NA RBju