

IZ VEĆE U MANJE → MNOŽIMO → TOČKA U DESNO

IZ MANJE U VEĆU → DIJELIMO → TOČKA U LIJEVO

1. a)  $9,2 \text{ m} = 9,2 \cdot 100 = 920 \text{ cm}$        $1 \text{ m} = 100 \text{ cm}$

b)  $14 \text{ dm} = 14 : 10 \text{ m} = 1,4 \text{ m}$        $1 \text{ m} = 10 \text{ dm}$

c)  $23 \text{ cm} = 23 : 100 \text{ m} = 0,23 \text{ m}$        $1 \text{ m} = 100 \text{ cm}$

d)  $4,1 \text{ cm} = 4,1 \cdot 10 \text{ mm} = 41 \text{ mm}$        $1 \text{ cm} = 10 \text{ mm}$

e)  $256 \text{ m} = 256 : 1000 \text{ km} = 0,256 \text{ km}$        $1 \text{ km} = 1000 \text{ m}$

f)  $7,08 \text{ km} = 7,08 \cdot 1000 \text{ m} = 7080 \text{ m} = 7080 : 10 \text{ dm} = 70800 \text{ dm}$

$1 \text{ km} = 1000 \text{ m}$  a  $1 \text{ m} = 10 \text{ dm}$

2.  $l_1 = 4 \text{ cm}$

$n = 20$  ( $n = \text{broj knjiga}$ )

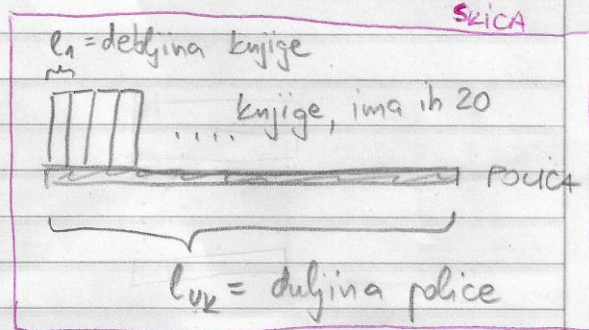
$l_{\text{uk}} = ?$

$l_{\text{uk}} = n \cdot l_1$

$l_{\text{uk}} = 20 \cdot 4 \text{ cm}$

$l_{\text{uk}} = 80 \text{ cm}$

Polica je dužine 80 cm.



tražimo ukupnu dužinu  $l_{\text{uk}}$   
svih 20 knjiga, svake po  $l_1$

3. PLOŠTINA JEDNOG PAPIRA  $A_1 = 250 \text{ cm}^2$

PANO:  $A_{\text{uk}} = 1,5 \text{ m}^2 = 1,5 \cdot 100 \cdot 100 \text{ cm}^2$

KOLIKO PAPIRA - BROJ! :  $n = ?$        $= 15000 \text{ cm}^2$

$n = \frac{A_{\text{uk}}}{A_1}$

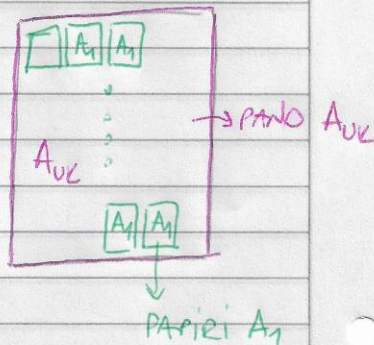
ukupno dijelimo sa  
jednim da dobijemo  
koliko tih jednih stane  
u ukupno

$n = \frac{15000 \text{ cm}^2}{250 \text{ cm}^2}$

$n = 60$

Potrebno je 60 papira.

možemo pretvoriti  
u iste mj. jedinice



Kada je na kvadrat ( $m^2, km^2$ ) radimo kao sa

4. h) dužinom, ali dvaput!

A kada je na treću ( $m^3, cm^3$ ) kao sa  
dužinom samo tri puta!

4. a)  $2 km^2 = 2 \cdot 1000 \cdot 1000 m^2 = 2\,000\,000 m^2$      $1 km = 1000 m$

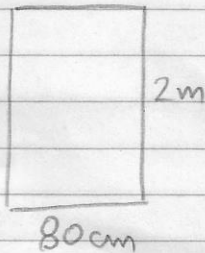
b)  $1,1 m^2 = 1,1 \cdot 10 \cdot 10 dm^2 = 110 dm^2$

c)  $28 dm^2 = 28 \cdot 100 \cdot 100 mm^2 = 280\,000 mm^2$      $1 dm = 100 mm$

d)  $569,8 mm^2 = 569,8 : 10 : 10 cm^2 = 5,698 cm^2$      $1 cm = 10 mm$

e)  $82 cm^2 = 82 : 100 : 100 m^2 = 0,0082 m^2$      $1 m = 100 cm$

5.



$$a = 2m = 200 cm$$

$$b = 80 cm$$

$$A = ?$$

$$A = a \cdot b$$

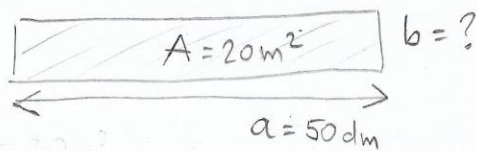
$$A = 200 cm \cdot 80 cm$$

$$A = 16000 cm^2$$

Površina iznosi  $16000 cm^2$ .

Most

6.



$a = \text{duljina}$

$b = \text{širina}$

zadano:

$$A = 20 \text{ m}^2$$

$$a = 50 \text{ dm} = 50 : 10 \text{ m} = 5 \text{ m}$$

$$1 \text{ m} = 10 \text{ dm}$$

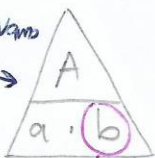
traži se:

$$b = ?$$

čim vidite da mjer. jedinice ne odgovaraju  $\rightarrow$  preračunajte!

Formula:  $A = a \cdot b$   
za površinu

Popunjavam  
trokut



mi nazivamo

$$b = \frac{A}{a}$$

$$b = \frac{20 \text{ m}^2}{5 \text{ m}} \rightarrow \text{m}^2 = \text{m} \cdot \text{m}$$

$$b = \frac{20 \cancel{\text{ m}} \cdot \text{m}}{5 \cancel{\text{ m}}}$$

$$b = 4 \text{ m}$$

NE MOŽETE OVDJE U ISTE, jer je  $A$  u kvadratima, a duljina u normalnim metrima

Preračunamo u one koje pašu, kako bi se nešto kratilo kasnije i slično...

to je u brojniku, a kako je u nazivniku meter  $\text{m}$ , jedan od ovih se kratiti i ostaje samo meter  $\text{m}$

ODGOVOR: Širina mosta iznosi 4 m.

SVE OVO MOGLA JE IZGLEDATI:

$$A = 20 \text{ m}^2$$

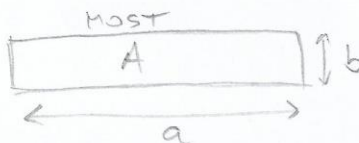
$$a = 50 \text{ dm} = 5 \text{ m}$$

$$b = ?$$

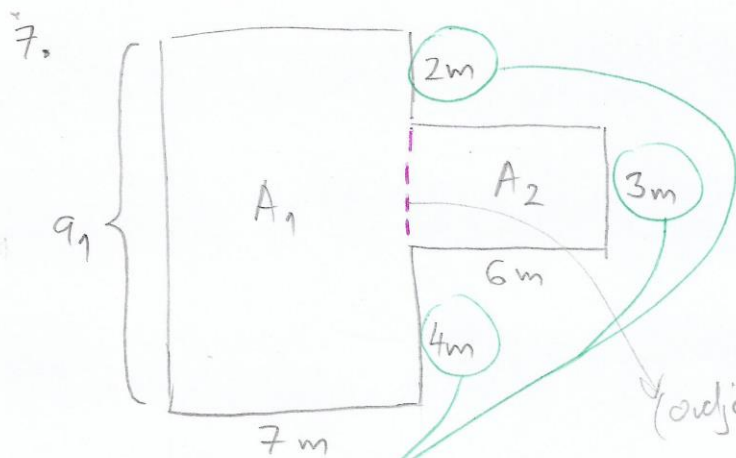
$$A = a \cdot b \rightarrow b = \frac{A}{a}$$

$$b = \frac{20 \text{ m}^2}{5 \text{ m}}$$

$$b = 4 \text{ m}$$



Širina mosta iznosi 4 m.



Površinu podijelimo  
 NA PRAVILNE GEOMETRIJSKE  
 LIKOVE čiju površinu znamo  
 IZRAČUNATI FORMULOM!

(ovdje smo podijelili)

... i sada imamo dvije pravilne površine

$A_1$  i  $A_2$ , dva PRAVOKUTNIKA

$a_1$  i  $b_1$  su duljina i širina pravokutnika  $A_1$

$a_2$  i  $b_2$  -||- pravokutnika  $A_2$

$$a_1 = 2\text{m} + 3\text{m} + 4\text{m}$$

$$a_1 = 9\text{m}$$

$$b_1 = 7\text{m}$$

$$A_1 = a_1 \cdot b_1$$

$$A_1 = 9\text{m} \cdot 7\text{m}$$

$$A_1 = 63\text{m}^2$$

$$A_2 = a_2 \cdot b_2$$

$$A_2 = 3\text{m} \cdot 6\text{m}$$

$$A_2 = 18\text{m}^2$$

$$\text{ZAJEDNO: } A = A_1 + A_2$$

$$A = 63\text{m}^2 + 18\text{m}^2$$

$$A = 81\text{m}^2$$

Površina dna ovog bazena  
 iznosi  $81\text{m}^2$ .

8. a)  $0,02\text{m}^3 = 0,02 \cdot 100 \cdot 100 \cdot 100\text{cm}^3 = 20000\text{cm}^3$

$1\text{m} = 100\text{cm}$ , ali je ovo na treću, pa to radimo 3 puta!  
 decimalna točka za 6 mjesta u desno (koliko ima nula)

b)  $1,1\text{dm}^3 = 1,1\text{L}$  jer je prostor od 1 litre jednak prostoru  $1\text{dm}^3$

$$1\text{L} = 1\text{dm}^3$$

c)  $2,8\text{dm}^3 = 2,8 \cdot 10 \cdot 10 \cdot 10\text{cm}^3 = 2800\text{cm}^3$   $1\text{dm} = 10\text{cm}$

d)  $569\text{mm}^3 = 569 : 10 : 10 : 10\text{cm}^3 = 0,569\text{cm}^3$   $1\text{cm} = 10\text{mm}$

↓  
 iz manje u veću dijelimo!

e)  $820 \text{ cm}^3 = \underline{820} : 100 : 100 : 100 \text{ m}^3 = 0,00082 \text{ m}^3$

$1 \text{ m} = 100 \text{ cm}$

(zadnju nulu izostavimo jer je točka ispred)

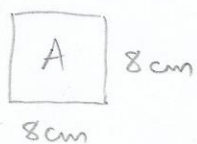
f)  $0,2 \text{ L} = 0,2 \cdot 10 \text{ dL} = 2 \text{ dL}$       $1 \text{ L} = 10 \text{ dL}$  (decilitra)

g)  $300 \text{ mL} = \underline{300} : 1000 \text{ L} = 0,3 \text{ L}$       $1 \text{ L} = 1000 \text{ mL}$  (mililitar)

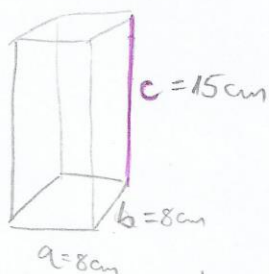
h)  $45 \text{ m}^3 = 45 \cdot 10 \cdot 10 \cdot 10 \text{ dm}^3 = 45000 \text{ L}$       $1 \text{ m} = 10 \text{ dm}$ , a  $1 \text{ L} = 1 \text{ dm}^3$

9.

Dno:



POSUDA



a)  $a = 8 \text{ cm}$   
 $b = 8 \text{ cm}$   


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 $A = ?$   
 $A = a \cdot b$   
 $A = 8 \text{ cm} \cdot 8 \text{ cm}$   
 $A = 64 \text{ cm}^2$

Površina dna staklenke iznosi  $64 \text{ cm}^2$ .

b)  $A = 64 \text{ cm}^2$   
 $c = 15 \text{ cm}$  (visina)

$V = ?$

$V = A \cdot c$

isto što i

$V = a \cdot b \cdot c$

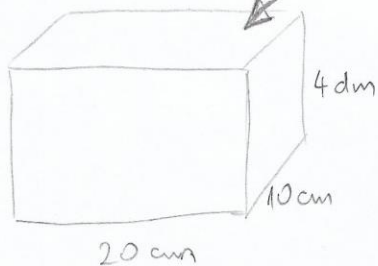
$a \cdot b = A$

$V = 64 \text{ cm}^2 \cdot 15 \text{ cm}$

$V = 960 \text{ cm}^3$

Volumen staklenke iznosi  $960 \text{ cm}^3$ .

10.



Tržimo stane li volumen vode ( $V_V = 20 \text{ L}$ ) u volumen akvarija ( $V_A = a \cdot b \cdot c$ )

→ moramo ih usporediti! Ako je volumen vode manji ili jednak → STANE!

$V_V = 20 \text{ L}$

$a = 20 \text{ cm}$

$b = 10 \text{ cm}$

$c = 4 \text{ dm} = 40 \text{ cm}$

$V_A = ?$

$V_A = a \cdot b \cdot c$  (KUBAR)

$V_A = 20 \text{ cm} \cdot 10 \text{ cm} \cdot 40 \text{ cm}$

$V_A = 8000 \text{ cm}^3$

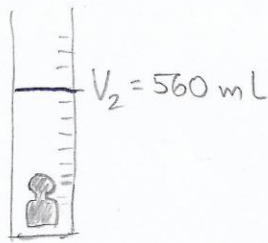
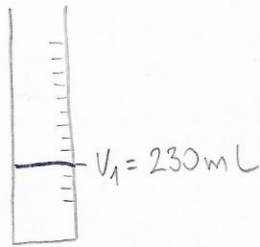
(volumen vode je u litrama, pa čemo pretvarati)

$V_A = 8000 : 1000 = 8 \text{ dm}^3$

$V_A = 8 \text{ dm}^3 = 8 \text{ L}$

MANJI OD VODE PA NE STANE!

11.



$$V_1 = 230 \text{ mL}$$

$$V_2 = 560 \text{ mL}$$

$$V_{\text{UTEGA}} = ?$$

$$V_{\text{UTEGA}} = V_2 - V_1$$

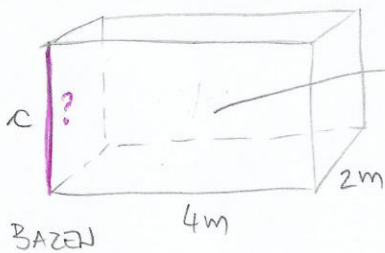
$$V_{\text{UTEGA}} = 560 \text{ mL} - 230 \text{ mL}$$

$$V_{\text{UTEGA}} = 330 \text{ mL}$$

12. PRESKACENO...

Volumen utega je 330 mL.

13.



$$V = 16000 \text{ L} \quad (\text{litra je mj. jed. za volumen!})$$

$$V = 16000 \text{ dm}^3$$

$$V = 16000 : 10 : 10 : 10 \text{ m}^3 = 16 \text{ m}^3$$

$$a = 4 \text{ m}$$

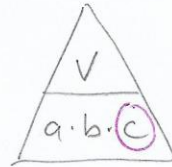
$$b = 2 \text{ m}$$

$$c = ?$$

$$V = a \cdot b \cdot c$$

$$c = \frac{V}{a \cdot b}$$

$$c = \frac{16 \text{ m}^3}{4 \text{ m} \cdot 2 \text{ m}} = \frac{16 \text{ m}^3 = \cancel{\text{m}} \cdot \cancel{\text{m}} \cdot \cancel{\text{m}}}{8 \text{ m}^2 = \cancel{\text{m}} \cdot \cancel{\text{m}}}$$



$$c = 3 \text{ m} \quad \text{Visina bazena iznosi 3 m.}$$

14. a)  $8 \text{ kg} = 8 \cdot 1000 \text{ g} = 8000 \text{ g} \quad 1 \text{ kg} = 1000 \text{ g}$

b)  $5 \text{ kg} = 5000 \text{ g} = 5000 : 10 \text{ dag} = 500 \text{ dag} \quad 1 \text{ kg} = 1000 \text{ g} \quad 1 \text{ dag} = 10 \text{ g}$

c)  $9 \text{ t} = 9 \cdot 1000 \text{ kg} = 9000 \text{ kg} \quad 1 \text{ t} = 1000 \text{ g (TONA)}$

d)  $5 \text{ dag} = 5 \cdot 10 \text{ g} = 50 \text{ g} \quad 1 \text{ dag} = 10 \text{ g}$

e)  $423 \text{ g} = 423 : 1000 \text{ kg} = 0,423 \text{ kg} \quad 1 \text{ kg} = 1000 \text{ g}$

14. f)  $9,2 \text{ kg} = 9,2 \cdot 1000 \text{ g} = 9200 \text{ g} = 9200 : 10 \text{ dag} = 920 \text{ dag}$

g)  $25 \text{ g} = 25 : 10 \text{ dag} = 2,5 \text{ dag} \quad 1 \text{ dag} = 10 \text{ g}$

h)  $3,24 \text{ t} = 3,24 \cdot 1000 \text{ kg} = 3240 \text{ kg} \quad 1 \text{ t} = 1000 \text{ kg}$

i)  $76 \text{ dag} = 76 \cdot 10 \text{ g} = 760 \text{ g} = 760 : 1000 \text{ kg} = 0,76 \text{ kg}$

15. a)  $35 \text{ g/cm}^3 = 35 \cdot 1000 \text{ kg/m}^3 = 35000 \text{ kg/m}^3$

b)  $120 \text{ kg/m}^3 = 120 : 1000 \text{ g/cm}^3 = 0,12 \text{ g/cm}^3$

$1 \text{ g/cm}^3 = 1000 \text{ kg/m}^3$   
izgleda netočno, ali je točno

16.  $m = 0,03 \text{ kg} = 0,03 \cdot 1000 \text{ g} = 30 \text{ g}$

$V = 15 \text{ cm}^3$

$\rho = ? \quad \rho = \text{gustoća (}\rho\text{)}$

Zadane vrijednosti ne odgovaraju, jer su  
mjerne jedinice gustoće  $\text{g/cm}^3$  ili  $\text{kg/m}^3$   
pa tražimo jednu od tih kombinacija!

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

$\rho = \frac{30 \text{ g}}{15 \text{ cm}^3}$

$\rho = 2 \text{ g/cm}^3$

Gustoća tijela iznosi  $2 \text{ g/cm}^3$ .

→ ostaje mješovita mj. jedinica!

17.  $m = 180 \text{ kg}$

$\rho = 1,8 \text{ g/cm}^3 = 1,8 \cdot 1000 \text{ kg/m}^3 = 1800 \text{ kg/m}^3$

→ opet ne odgovaraju mj. jedinice!

$V = ?$

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



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

$V = \frac{180 \text{ kg}}{1800 \text{ kg/m}^3}$

Krate se kg i kg i ostaje  $\text{m}^3$ ,  
što je mj. jedinica volumena

$V = 0,1 \text{ m}^3$

Kutija treba imati volumen od  $0,1 \text{ m}^3$ .

18.  $V = 20 \text{ L}$  (litra je mj. jed. za volumen!)

$$V = 20 \text{ L} = 20 \text{ dm}^3 = 20 : 10 : 10 : 10 \text{ m}^3 = 0,02 \text{ m}^3$$

$$\rho = 700 \text{ kg/m}^3$$

$$m = ?$$

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



$$m = \rho \cdot V$$

$$m = 700 \text{ kg/m}^3 \cdot 0,02 \text{ m}^3$$

$$m = 14 \text{ kg}$$

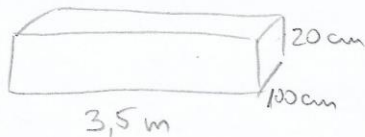
$$1 \text{ m} = 10 \text{ dm}$$

(moraćemo da nam odgovoraju ujedne jedinice)

Krate se! ostaje kg, što je mj. jedinica za masu

Dvadeset litara benzina ima masu 14 kg.

19.



$$a = 3,5 \text{ m} = 3,5 \cdot 100 \text{ cm} = 350 \text{ cm} \quad 1 \text{ m} = 100 \text{ cm}$$

$$b = 100 \text{ cm}$$

$$c = 20 \text{ cm}$$

$$\rho = 700 \text{ kg/m}^3$$

KVADAR:

$$V = a \cdot b \cdot c$$

$$V = 350 \text{ cm} \cdot 100 \text{ cm} \cdot 20 \text{ cm}$$

$$V = 700\,000 \text{ cm}^3$$

$$V = 700\,000 : 100 : 100 : 100 \text{ m}^3$$

$$V = 0,7 \text{ m}^3$$

$$m = ?$$

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



$$m = \rho \cdot V \rightarrow \text{ne znamo}$$

$$m = 700 \text{ kg/m}^3 \cdot 0,7 \text{ m}^3$$

$$m = 490 \text{ kg}$$

Masa grede iznosi 490 kg.