1. Izračunaj:

(a) $4\frac{5}{6} + 7\frac{1}{4} = 4\frac{10}{12} + 7\frac{3}{12} = 11\frac{13}{12} = 12\frac{1}{12}$

(b) $5\frac{2}{3} + 7\frac{3}{4} = 5\frac{8}{12} + 7\frac{9}{12} = 12\frac{17}{12} = 13\frac{5}{12}$

(c) $15\frac{4}{9} - 3\frac{2}{3} = 15\frac{4}{9} - 3\frac{6}{9} = 14\frac{13}{9} - 3\frac{6}{9} = 11\frac{7}{9}$

(d) $12\frac{3}{8} - 3\frac{3}{4} = 12\frac{9}{24} - 3\frac{18}{24} = 11\frac{33}{24} - 3\frac{18}{24} = 8\frac{15}{24} = 8\frac{5}{8}$

(e) $3\frac{4}{7} \cdot 1\frac{13}{15} = \frac{25 \cdot 28 \cdot 5 \cdot 4}{7 \cdot 15 \cdot 3 \cdot 1} = \frac{20}{3} = 6\frac{2}{3}$

(f) $2\frac{4}{9} \cdot 2\frac{7}{10} = \frac{22 \cdot 27 \cdot 3 \cdot 11}{9 \cdot 10 \cdot 1 \cdot 5} = \frac{33}{5} = 6\frac{3}{5}$

(g) $5\frac{5}{6} : 2\frac{1}{3} = \frac{35 \cdot 3 \cdot 5 \cdot 1}{6 \cdot 7 \cdot 1 \cdot 2} = \frac{5}{2} = 2\frac{1}{2}$

(h) $1\frac{7}{8} : 1\frac{1}{4} = \frac{15 \cdot 4 \cdot 3 \cdot 1}{8 \cdot 5 \cdot 1 \cdot 2} = \frac{3}{2} = 1\frac{1}{2}$

2. Izračunaj:

(a) $95{,}4 + 9{,}56 = 104{,}96$

$$\begin{array}{r} 95{,}40 \\ +\ 9{,}56 \\ \hline 104{,}96 \end{array} \qquad \begin{array}{r} 82{,}30 \\ +\ 34{,}47 \\ \hline 116{,}77 \end{array}$$

(b) $82{,}3 + 34{,}47 = 116{,}77$

(c) $70 - 24{,}6 = 45{,}4$

$$\begin{array}{r} 70{,}0 \\ -\ 24{,}6 \\ \hline 45{,}4 \end{array} \qquad \begin{array}{r} 60{,}0 \\ -\ 44{,}4 \\ \hline 15{,}6 \end{array}$$

(d) $60 - 44{,}4 = 15{,}6$

(e) $0{,}7 \cdot 0{,}08 = 0{,}056$

(f) $0{,}08 \cdot 0{,}06 = 0{,}0048$

(g) $3{,}7 : 0{,}5 = 7{,}4$

$37 : 5 = 7{,}4$
$20$

(h) $3{,}8 : 0{,}4 = 9{,}5$

$38 : 4 = 9{,}5$
$20$

3. Izračunaj vrednost izrazov.

$\frac{3}{5} + 1\frac{2}{5} \cdot 15 =$

$= \frac{3}{5} + \frac{7 \cdot 15 \cdot 3}{5 \cdot 1 \cdot 1} =$

$= \frac{3}{5} + 21 =$

$= 21\frac{3}{5}$

$\frac{2}{7} + 1\frac{1}{6} \cdot 12 =$

$= \frac{2}{7} + \frac{7 \cdot 12 \cdot 2}{6 \cdot 1 \cdot 1} =$

$= \frac{2}{7} + 14 =$

$= 14\frac{2}{7}$

$100 - ((2 - \frac{1}{8}) + (3 - 2\frac{5}{6})) =$

$= 100 - (1\frac{7}{8} + \frac{1}{6}) =$

$= 100 - (1\frac{21}{24} + \frac{4}{24}) =$

$= 100 - 1\frac{25}{24} =$

$= 100 - 2\frac{1}{24} = 97\frac{23}{24}$

$100 - ((3 - \frac{1}{6}) + (2 - 1\frac{5}{8})) =$

$= 100 - (2\frac{5}{6} + \frac{3}{8}) =$

$= 100 - (2\frac{20}{24} + \frac{9}{24}) =$

$= 100 - 2\frac{29}{24} =$

$= 100 - 3\frac{5}{24} =$

$= 96\frac{19}{24}$

i) $27:8=3{,}375$ (30, 60, 40)  l) $21:8=2{,}625$ (50, 20, 40)

KRAJŠAJ

4. Naslednje ulomke zapiši z odstotki.

(a) $\frac{28}{100} = 28\%$

(b) $\frac{3}{10} = \frac{30}{100} = 30\%$

(c) $\frac{19}{25} = \frac{76}{100} = 76\%$ (19·4 / 76)

(d) $\frac{36}{100} = 36\%$

(e) $\frac{7}{10} = \frac{70}{100} = 70\%$

(f) $\frac{13}{20} = \frac{65}{100} = 65\%$ (13·5 / 65)

(g) $\frac{12}{15} = \frac{4}{5} = \frac{80}{100} = 80\%$ ∧3

(h) $\frac{42}{300} = \frac{14}{100} = 14\%$ ∧3 (42:3=14, 12)

(i) $3\frac{3}{8} = 337{,}5\%$ ($\frac{27}{8}$)

(j) $\frac{12}{30} = \frac{4}{10} = 40\%$ ∧3

(k) $\frac{45}{500} = \frac{9}{100} = 9\%$ ∧5

(l) $2\frac{5}{8} = 262{,}5\%$ ($\frac{21}{8}$)

5. Naslednja števila zapiši z odstotki.

(a) $0{,}76 = 76\%$

(b) $0{,}6 = 60\%$

(c) $0{,}7 = 70\%$

(d) $6 = 600\%$

(e) $4 = 400\%$

(f) $0{,}0057 = 0{,}57\%$

(g) $0{,}13 = 13\%$

(h) $0{,}0057 = 0{,}57\%$

6. Naslednje odstotke zapiši z okrajšanimi ulomki:

(a) $28\% = \frac{28}{100} = \frac{7}{25}$

(b) $120\% = \frac{120}{100} = \frac{12}{10} = \frac{6}{5} = 1\frac{1}{5}$

(c) $36\% = \frac{36}{100} = \frac{9}{25}$

(d) $160\% = \frac{160}{100} = \frac{16}{10} = \frac{8}{5} = 1\frac{3}{5}$

(e) $0{,}4\% = \frac{0{,}4}{100} = \frac{4}{1000} = \frac{1}{250}$

(f) $\frac{3}{4}\% = \frac{0{,}75}{100} = \frac{75}{10000} = \frac{3}{400}$

(g) $0{,}5\% = \frac{0{,}5}{100} = \frac{5}{1000} = \frac{1}{200}$

(h) $\frac{3}{5}\% = \frac{0{,}6}{100} = \frac{6}{1000} = \frac{3}{500}$ ($\frac{6}{10} = 0{,}6$)

7. Naslednje odstotke zapiši z decimalnimi števili.

(a) $37\% = 0{,}37$

(b) $3\% = 0{,}03$

(c) $80\% = 0{,}8$

(d) $7\% = 0{,}07$

(e) $0{,}6\% = 0{,}006$

(f) $140\% = 1{,}4$

(g) $0{,}9\% = 0{,}009$

(h) $310\% = 3{,}1$

PROCENTI (100%) celota DEL (od celote)

8. Izračunaj:

(a) 40 % od 70 min = 28 min

(b) $\frac{3}{4}$ % od 36 ha = 0,27 ha

(c) 25 % od 32 km = 8 km

(d) 22 % od 150 cm = 33 cm

(e) 60 % od 80 min = 48 min

(f) $\frac{3}{4}$ % od 28 ha = 0,21 ha

(g) 20 % od 35 km = 7 km

(h) 75 % od 24 cm = 18 cm

$$\begin{array}{r} 0,75 \cdot 36 \\ \hline 225 \\ 450 \\ \hline 27,00 \end{array}$$

$$\begin{array}{r} 0,75 \cdot 28 \\ \hline 150 \\ 600 \\ \hline 21,00 \end{array}$$

a) $\frac{40 \cdot 70}{100} = \frac{4 \cdot 7}{10 \cdot 1} = 28$

b) $\frac{3}{4}\% = 0,75\%$

$\frac{0,75 \cdot 36}{100} = \frac{27}{100} = 0,27$

c) 32 km ... 100%
8 km ... x%

$x = \frac{8 \cdot 100\% \cdot 1 \cdot 25}{32 \cdot 4 \cdot 1} = 25\%$

d) 22% ... 33 cm
100% ... x cm

$x = \frac{100 \cdot 33 \cdot 3 \cdot 50}{22 \cdot 2 \cdot 1} = 150$

e) $\frac{60 \cdot 80 \cdot 6 \cdot 8}{100 \cdot 10 \cdot 1} = 48$

f) $\frac{3}{4} = 0,75$

0,75% od 28 ha =

$= \frac{0,75 \cdot 28}{100} = \frac{21}{100} = 0,21$

g) 100% ... 35 km
x% ... 7 km

$x = \frac{100\% \cdot 7 \cdot 1 \cdot 20}{35 \cdot 5 \cdot 1} = 20\%$

h) 75% ... 18
100% ... x

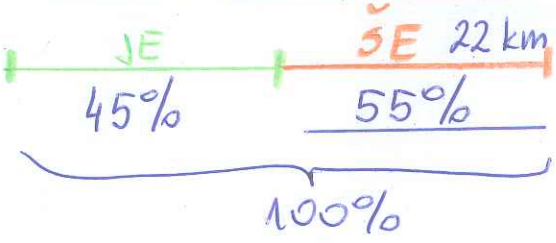
$x = \frac{100 \cdot 18 \cdot 4 \cdot 6}{75 \cdot 3 \cdot 1} = 24$

9. Podjetje vijaki d.o.o. izdeluje vijake. Dobili so naročilo za izdelavo vijakov dolžine 55 mm. Zaradi napake na stroju je 15 % izdelanih vijakov dolgih 51 mm. Koliko vijakov morajo izdelati, da bo 1700 vijakov ustrezalo naročilu.

10. Tekač na dolge proge je pretekel že 45 % proge. Koliko meri celotna proga, če mu je do cilja ostalo še 22 km?

JE ŽE

CELOTA




22 km .... 55 %
X km .... 100 %

$X = \frac{22 \cdot 100 \cdot 2 \cdot 20}{55 \cdot 5 \cdot 1} = 40$

ODG: Celotna proga meri 40 km.
Pretekel je 45%, kar je 18 km.

40 − 22 = 18

CELOTA DEL V %

11. Iz pšenice lahko dobimo 84 % moke. Koliko moke lahko zmeljemo iz 35 vreč, če je v vsaki vreči po 50 kg pšenice?

IMAMO $35 \cdot 50\,kg = 1750\,kg$ pšenice - celota

1750 kg .... 100%
MOKE X kg .... 84%

$175 \cdot 84 = 1400 + 700 = 14700$

$X = \frac{1750 \cdot 84 \cdot 175}{100 \cdot 10} = \frac{14700}{10} = 1470\,kg$ moke

Dobimo 1470 kg moke.

12. Jeklena vzmet z dolžino 60 cm se lahko raztegne (podaljša) za največ 20 odstotkov. Med katerima dolžinama je lahko raztegnjena vzmet?

celota: 60 cm
del:
del v %: 20%

60 cm ..... 100%
x cm ..... 20%

$X = \frac{60 \cdot 20 \cdot 2 \cdot 6}{100 \cdot 10 \cdot 1} = 12\,cm$

60 + 12 = 72 cm

Zmet ima lahko razdaljo od 60 do 72 cm.

---

nal 9

1700 vijakov

85% ..... 1700
100% ..... X

$X = \frac{100 \cdot 1700 \cdot 20 \cdot 100}{85 \cdot 17 \cdot 1} = 2000$

85 : 5 = 17
35

Narediti morajo 2000 vijakov.

PR: $\frac{15 \cdot 2000 \cdot 20}{100} =$
$= 300$ vijakov 5 km.

13. V podjetju s 30 zaposlenimi delavci je 16 žensk. Koliko odstotkov zaposlenih predstavljajo ženske? Koliko odstotkov zaposlenih pa predstavljajo moški?

celota: 30
del ženske: 16
del v %

30 ... 100%
16 ... x %

$x = \frac{16 \cdot 100 \cdot 10\%}{30 \cdot 3} = \frac{160}{3}\% = 53\frac{1}{3}\%$ - ženske

160 : 3 = 53
10
1 ost

$100\% - 53\frac{1}{3}\% = 46\frac{2}{3}\%$ - moški

14. Trgovina ima 40-odstotno razprodajo. Kolikšna je nova cena čevljev, če je bila stara cena 120 €?

celota: 120€
del: del - popust
del v %: 40% - popust

ALI plačamo 60% cene

Plačamo 72€.

120€ ... 100%
x€ ... 40%

$x = \frac{120 \cdot 40 \cdot 12 \cdot 4}{100 \cdot 10 \cdot 1}$

x = 48€ (popust)

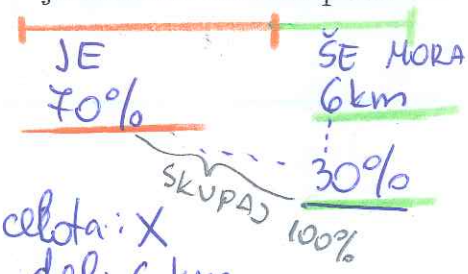
120€ - 48€ = 72€

120€ ... 100%
x€ ... 60%

$x = \frac{120 \cdot 60 \cdot 12 \cdot 6}{100 \cdot 10 \cdot 1} =$

$= 72$€

15. Ko je izletnik prehodil 70 % načrtovane poti, mu je ostalo še 6 km. Kolikšna je dolžina celotne poti?




celota: x
del: 6 km
del v %: 30%

100% ... x
30% ... 6 km

$x = \frac{100 \cdot 6 \cdot 1 \cdot 20}{30 \cdot 5 \cdot 1}$

x = 20km

Celotna pot je dolga 20 km.

100% ... 20 km
70% ... 14 km
30% ... 6 km

16. V zaboju je 25 kg svežih orehov. Pri sušenju izgubijo 36% svoje mase. Suhe orehe očistimo. Pri tem je za 64 % luščin. Koliko kilogramov suhih jedrc bomo dobili iz zaloge v zaboju?

CELOTA

1) celota: 25kg svežih orehov
del: x
del v %: 36%

25kg ... 100%
x kg ... 36%

$x = \frac{25 \cdot 36 \cdot 1 \cdot 9}{100 \cdot 4 \cdot 1}$

x = 9 kg

→ 9kg izgubijo mase,

25 − 9 = 16 kg

16 kg suhih orehov, od tega 64% luščin

LUŠČINE ←

100% ... 16 kg
64% ... x kg

$x = \frac{64 \cdot 16}{100} = \frac{1024}{100} =$

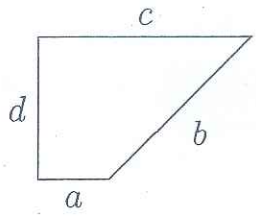
$= 10{,}24$ kg LUŠČIN

16,00 − 10,24 = 5,76

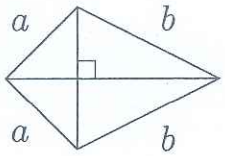
Dobimo 5,76 kg suhih jedrc.

$\frac{64 \cdot 16}{64}$
384
1024

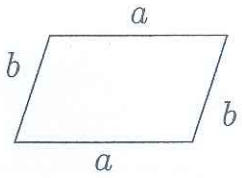
17. Poimenuj spodnje like: /4



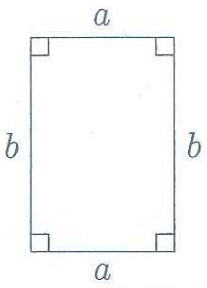

TRAPEZ



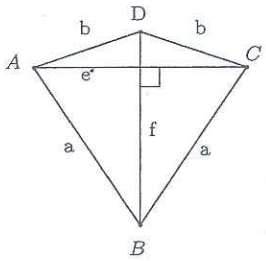

DELTOID



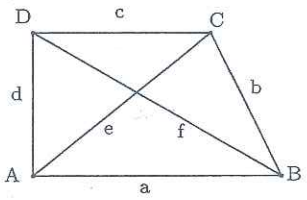

PARALELOGRAM



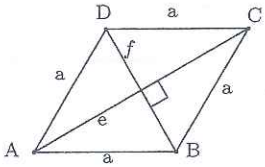

PRAVOKOTNIK



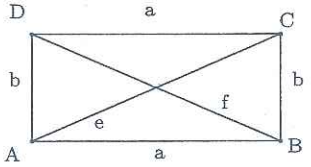

DELTOID



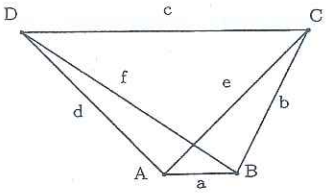

TRAPEZ



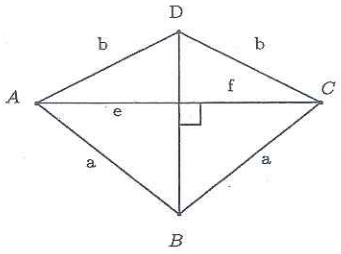

ROMB



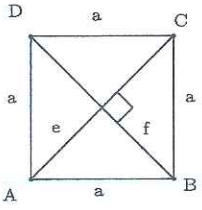

PRAVOKOTNIK



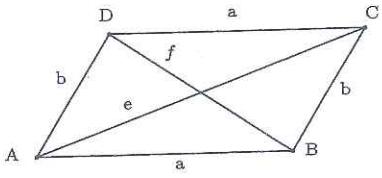

TRAPEZ




DELTOID




KVADRAT

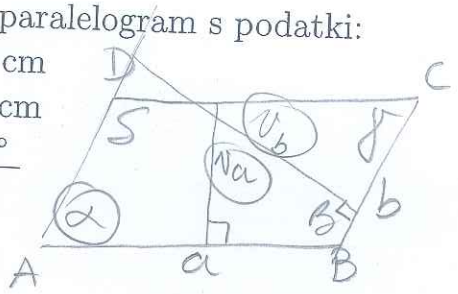


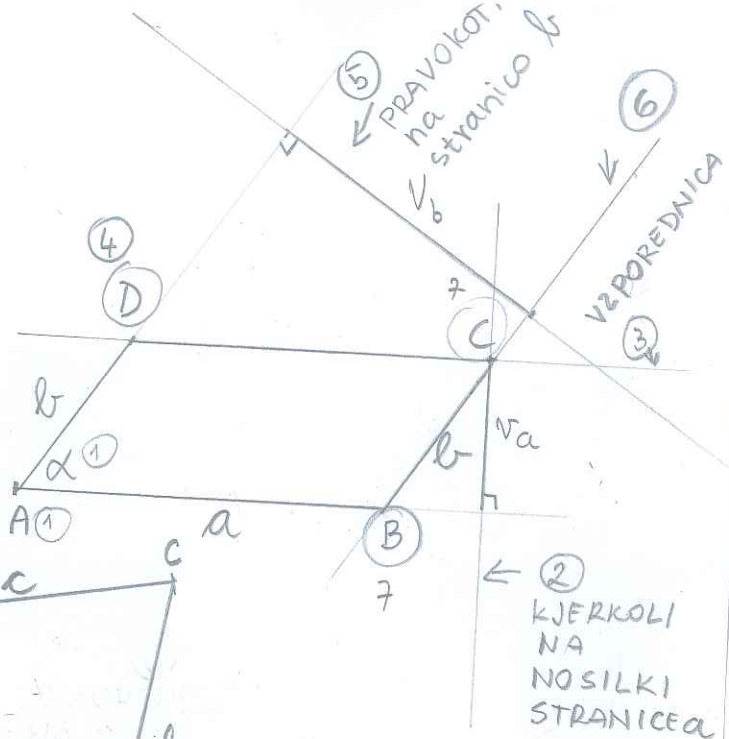

PARALELOGRAM

① $\alpha$
② pravokotnico

18. Nariši paralelogram s podatki:

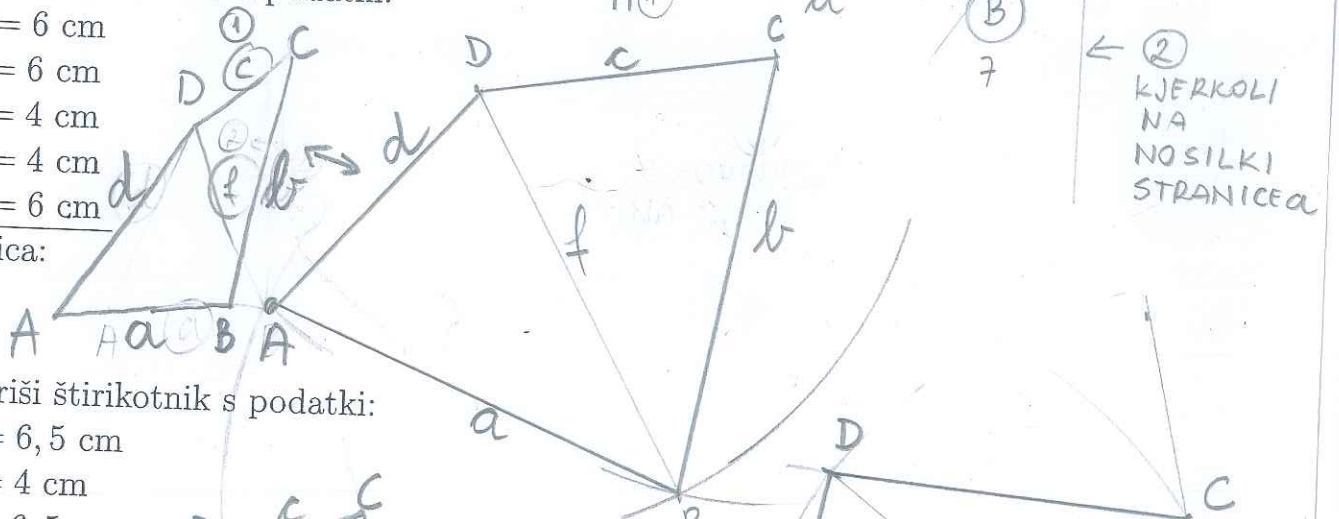
$v_a = 2$ cm
$v_b = 4$ cm
$\alpha = 55°$
Skica:



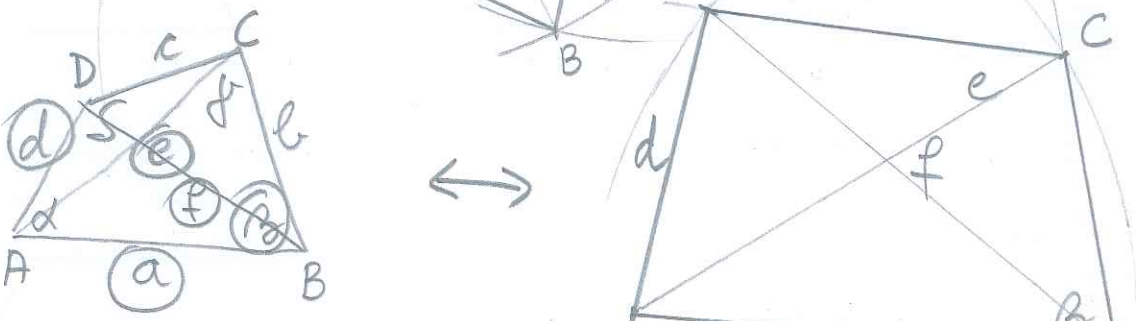

19. Nariši štirikotnik s podatki:

ŠESTILO
② ALI ③ $b = 6$ cm
① $c = 4$ cm
$d = 4$ cm
③ AH ② $f = 6$ cm
Skica:




20. Nariši štirikotnik s podatki:

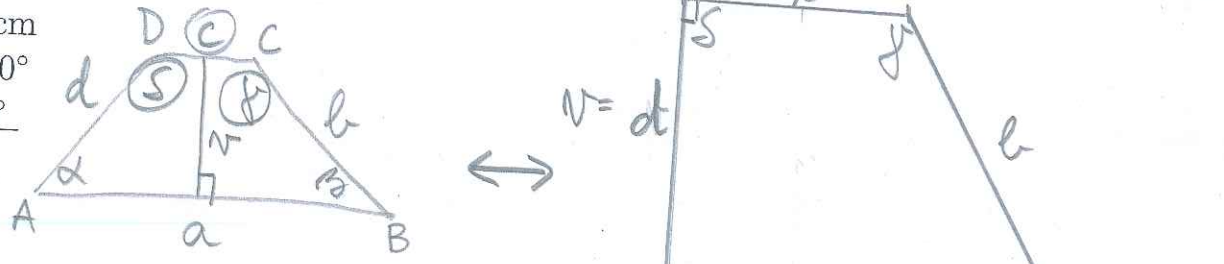
① $a = 6,5$ cm
④ $d = 4$ cm
⑤ $e = 6,5$ cm
② $\beta = 75°$ cm
③ $f = 7$ cm
Skica:




21. Nariši trapez s podatki:

① $c = 3$ cm
$v = 4$ cm
② $\gamma = 120°$
③ $\delta = 90°$
Skica:

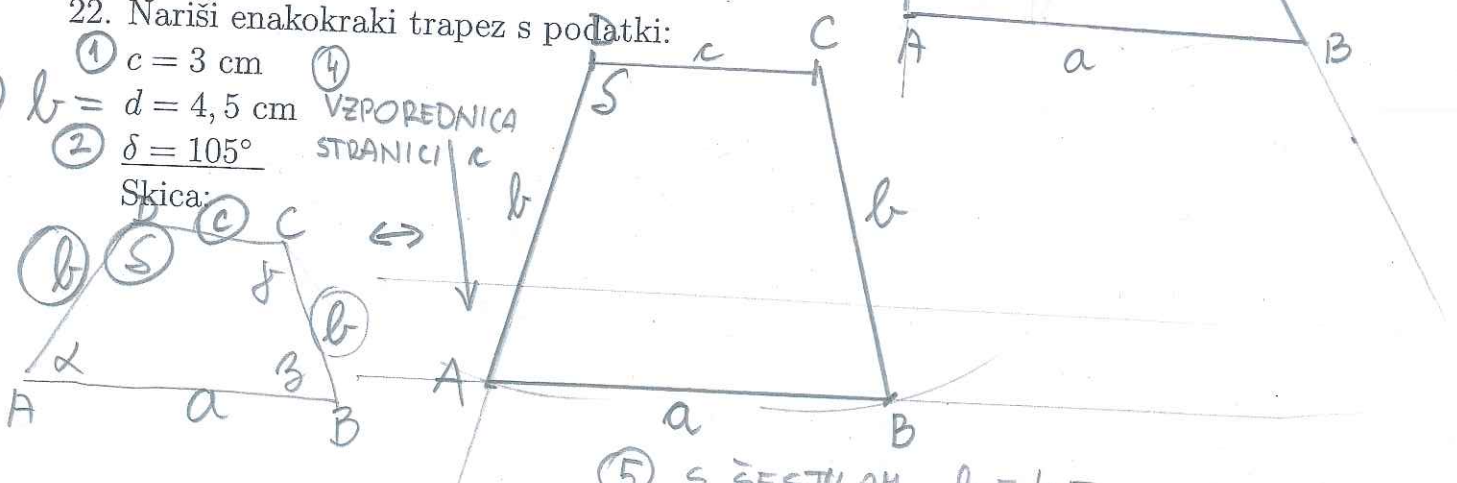
④ VIŠINA




22. Nariši enakokraki trapez s podatki:

① $c = 3$ cm
③ $b = d = 4,5$ cm
② $\delta = 105°$
Skica:

④ VZPOREDNICA STRANICI c




⑤ S ŠESTILOM $b = 4,5$ cm