

Obseg in ploščina likov - VAJE

(pravokotnik, kvadrat, paralelogram, romb, deltoid, trapez)

1. Izračunaj obseg in ploščino pravokotnika. (Zapiši obrazec in oznako.)

a) dolžina = 48 m, širina = 4 m b) dolžina = $\frac{5}{8}$ cm, širina = 1,4 cm

2. Izračunaj dolžino druge stranice pravokotnika (širino pravokotnika).

a	7 m	15 dm	60 m
p	56 m ²	120 dm ²	42 a
b			

PRAVOKOTNIK

$$p = a \cdot b$$

$$o = 2 \cdot a + 2 \cdot b$$



3. Dani so trije pravokotniki. Pri vsakem nas zanima dolžina, širina, obseg in ploščina.

a) a = 8 cm, o = 3 dm b) o = 38,6 dm, b = 12,8 dm c) p = 405 m², a = 13,5 m

4. Na 30 m široki in 160 m dolgi njivi pravokotne oblike bo kmet posejal koruzo. Koliko kg semenske koruze potrebuje, če za 1 m² porabi 20 dag.

5. S spremembo zazidalnega načrta naj bi zamenjali 18 m dolgo in 12 m široko zemljišče za ploščinsko enako zemljišče s širino 16 m. Kako dolgo mora biti drugo zemljišče?

6. Izračunaj obseg in ploščino kvadrata.

a) a = 6 cm b) a = $\frac{3}{4}$ cm c) a = 12,4 cm

KVADRAT

$$p = a \cdot a = a^2$$

$$o = 4 \cdot a$$



7. Izračunaj dolžino stranice kvadrata, če meri njegov obseg 139,6 m.

8. Dana je ploščina kvadrata. Izračunaj njegovo stranico in obseg.

a) p = 49 cm² b) p = 100 m²

9. Kvadrat s stranico 16 dm in pravokotnik s stranico 12 dm imata enaki ploščini. Kolikšna sta njuna obsega?

10. Izračunaj neznane količine v paralelogramu.

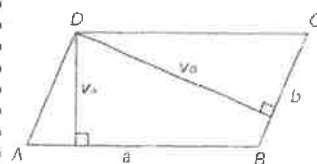
a) a = 1,2 dm, p = 1020 cm², v_a = ?

b) p = 40 cm², v_b = 5 cm, b = ?

PARALELOGRAM

$$p = a \cdot v_a \text{ ali } p = b \cdot v_b$$

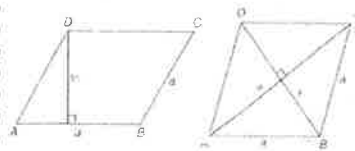
$$o = 2 \cdot a + 2 \cdot b$$



ROMB

$$p = a \cdot v_a \text{ ali } p = \frac{e \cdot f}{2}$$

$$o = 4 \cdot a$$



11. Izračunaj neznane količine romba.

a	v	e	f	p	o
	15	24	20		
5,4		12		32,4	
			14	175	70

12. Romb in kvadrat imata enako dolgi stranici $a = 27$ cm. Višina romba je 18 cm. Kateri lik ima večjo ploščino in za koliko?

13. Diagonali romba merita 16 dm in 12 dm. Koliko meri ploščina romba? Kolikšna je njegova stranica, če sta obe vzporedni stranici med seboj oddaljeni 9,6 dm?

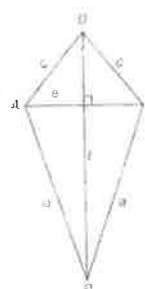
14. Izračunaj manjkajoče podatke za deltoid.

e	f	p
11 cm		88 cm ²
	9,5 cm	76 cm ²
$8\frac{3}{5}$ cm		26 cm

DELTOID

$$p = \frac{e \cdot f}{2}$$

$$o = 2 \cdot a + 2 \cdot b$$



15. Izračunaj obseg in ploščino deltoida, če stranici merita 30 mm in 45 mm, diagonali pa 6,5 cm in 4 cm.

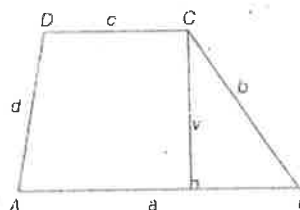
16. Sara si je na majico narisala lik, ki ima obliko zmaja. Stranice lika so bile dolge 1,4 dm in 2,2 dm. Nato ga je obšla z zlatim trakom. Koliko m traku je morala kupiti?

17. Koliko m² meri ploščina trapeza, če meri osnovnica $a = 17$ m, osnovnica $c = 13$ m, višina $v = 18$ m?

TRAPEZ

$$p = \frac{(a+c) \cdot v}{2}$$

$$o = a + b + c + d$$



18. Presek skozi vodni kanal ima obliko enakokrakega trapeza. Izračunaj ploščino takega preseka, če osnovnica a meri 0,9 m, osnovnica $c = 4,2$ m, višina trapeza meri 1,7 m.

19. Osnovnici enakokrakega trapeza sta oddaljeni 4,2 cm in merita 8,5 cm ter 6,2 cm. Kraka sta dolga 4,5 cm. Kolikšen je obseg trapeza in kolikšna je ploščina?

20. Izračunaj neznane količine v trapezu.

a) $p = 533$ m², $s = 32,5$ m, $v = ?$ b) $p = 52,5$ m², $v = 3,5$ m, $a = 18,5$ m, $c = ?$

Obseg in ploščina likov - VAJE

PRAVOKOTNIK

1. a) $a = 48 \text{ m}$



$$\sigma = 2 \cdot a + 2 \cdot b$$

$$\sigma = 2 \cdot 48 + 2 \cdot 4$$

$$\sigma = 96 + 8$$

$$\sigma = 104 \text{ m}$$

$$p = a \cdot b$$

$$p = 48 \cdot 4$$

$$p = 192 \text{ m}^2$$

b)



$$b = 1,4 \text{ cm} = 1\frac{4}{10} \text{ cm}$$

$$a = \frac{5}{8} \text{ cm}$$

$$\sigma = 2 \cdot a + 2 \cdot b$$

$$\sigma = 2 \cdot \frac{5}{8} + 2 \cdot 1\frac{4}{10} \quad \text{? ULOMKI}$$

$$\sigma = \frac{2 \cdot 5}{1 \cdot 8} + \frac{2 \cdot 14}{1 \cdot 10}$$

$$\sigma = \frac{5 \cdot 5}{4 \cdot 5} + \frac{14 \cdot 4}{5 \cdot 4}$$

$$\sigma = \frac{25}{20} + \frac{56}{20}$$

$$\sigma = \frac{81}{20}$$

$$\sigma = 4\frac{1}{20} \text{ cm}$$

$$p = a \cdot b$$

$$p = \frac{5}{8} \cdot 1\frac{4}{10}$$

$$p = \frac{5 \cdot 14}{8 \cdot 10}$$

$$p = \frac{7}{8} \text{ cm}^2$$

2.

a	7 m	15 dm	60 m
p	56 m ²	120 dm ²	42 a = 4200 m ²
b	8 m	8 dm	70 m

$$1 \text{ a} = 100 \text{ m}^2$$

ar

$$p = a \cdot b$$

$$56 = 7 \cdot (b)$$

$$b = 8 \text{ m}$$

$$p = a \cdot b$$

$$120 = 15 \cdot (b)$$

$$b = 120 : 15$$

$$b = 8 \text{ dm}$$

$$p = a \cdot b$$

$$4200 = 60 \cdot (b)$$

$$b = 4200 : 60$$

$$b = 70 \text{ m}$$

3. a) $a = 8 \text{ cm}$

$$\sigma = 3 \text{ dm} = 30 \text{ cm}$$

$$b = ?$$

$$p = ?$$

$$\sigma = 2 \cdot a + 2 \cdot b$$

$$30 = 2 \cdot 8 + 2 \cdot (b)$$

$$2 \cdot b = 30 - 16$$

$$2 \cdot b = 14$$

$$b = 7 \text{ cm}$$

$$p = a \cdot b$$

$$p = 8 \cdot 7$$

$$p = 56 \text{ cm}^2$$

b) $\sigma = 38,6 \text{ dm}$
 $b = 12,8 \text{ dm}$

 $a = ?$
 $p = ?$

$\sigma = 2 \cdot a + 2 \cdot b$
 $\downarrow$
 $38,6 = 2 \cdot a + 2 \cdot 12,8$
 $38,6 = 2 \cdot a + 25,6$
 $2 \cdot a = 38,6 - 25,6$
 $2 \cdot a = 13$
 $a = 13 : 2$
 $a = 6,5 \text{ dm}$

$p = a \cdot b$
 $p = 6,5 \cdot 12,8$
 $p = 83,2 \text{ dm}^2$

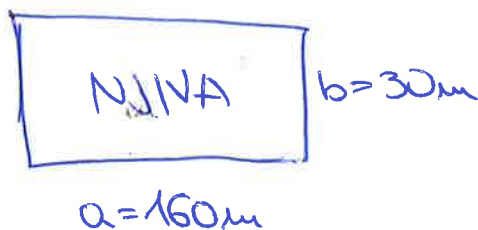
c) $p = 405 \text{ m}^2$
 $a = 13,5 \text{ m}$

 $\sigma = ?$
 $b = ?$

$p = a \cdot b$
 $\downarrow \quad \downarrow$
 $405 = 13,5 \cdot b$
 $b = 405 : 13,5$
 $b = 30 \text{ m}$

$\sigma = 2 \cdot a + 2 \cdot b$
 $\sigma = 2 \cdot 13,5 + 2 \cdot 30$
 $\sigma = 27 + 60$
 $\sigma = 87 \text{ m}$

4.



koliko kg? $1 \text{ m}^2 \dots 20 \text{ kg}$

koliko m^2 ? Znamo ne plošćino

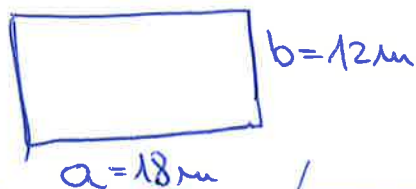
$p = a \cdot b$
 $p = 160 \cdot 30$
 $p = 4800 \text{ m}^2$

$\frac{4800 \cdot 20}{9600}$
 96000 kg

O: 96 000 kg semenske kornze.

5.

1. ZEMLJIŠĆE

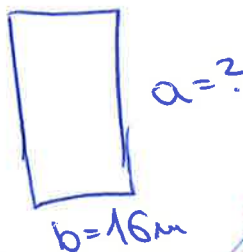


$p_1 = a \cdot b$

$p_1 = 18 \cdot 12$

$p_1 = 216 \text{ m}^2$

2. ZEMLJIŠĆE



$p_1 = p_2$

plošćini zemljišć
 sta enaki

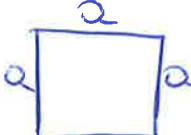
$p_2 = a \cdot b$

$216 = a \cdot 16$

$a = 216 : 16$

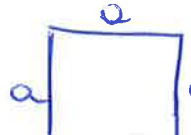
$a = 13,5 \text{ m}$

O: Dulgo je
 $13,5 \text{ m}$

6. a)  $a = 6 \text{ cm}$

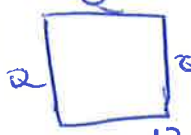
$\sigma = 4 \cdot a$
 $\sigma = 4 \cdot 6$
 $\sigma = 24 \text{ cm}$

$p = a \cdot a$
 $p = 6 \cdot 6$
 $p = 36 \text{ cm}^2$

b)  $a = \frac{3}{4} \text{ cm}$

$\sigma = 4 \cdot a$
 $\sigma = \frac{4}{1} \cdot \frac{3}{4}$
 $\sigma = 3 \text{ cm}$

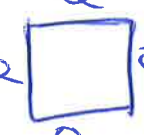
$p = a \cdot a$
 $p = \frac{3}{4} \cdot \frac{3}{4}$
 $p = \frac{9}{16} \text{ cm}^2$

c)  $a = 12,4 \text{ cm}$

$\sigma = 4 \cdot a$
 $\sigma = 4 \cdot 12,4$
 $\sigma = 49,6 \text{ cm}$

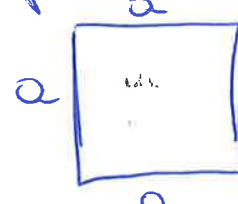
$p = a \cdot a$
 $p = 12,4 \cdot 12,4$
 $p = 153,76 \text{ cm}^2$

7. $\sigma = 138,6 \text{ cm}$
 $a = ?$

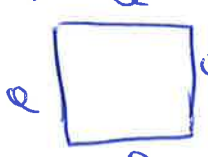


$\sigma = 4 \cdot a$
 $138,6 = 4 \cdot a$

$a = 138,6 : 4$
 $a = 34,65 \text{ cm}$

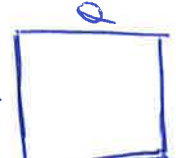
8. a) $p = 49 \text{ cm}^2$


$p = a \cdot a$
 $49 = a \cdot a$
 $49 = 7 \cdot 7$
 $a = 7 \text{ cm}$

b) $p = 100 \text{ m}^2$


$p = a \cdot a$
 $100 = a \cdot a$
 $100 = 10 \cdot 10$
 $a = 10 \text{ m}$

9. KVADRAT

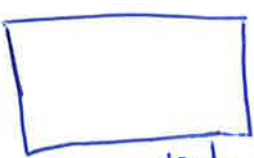
 $a = 16 \text{ dm}$

$P_{\square} = a \cdot a$
 $P_{\square} = 16 \cdot 16$
 $P_{\square} = 256 \text{ dm}^2$

$\sigma_{\square} = 4 \cdot a$
 $\sigma_{\square} = 4 \cdot 16$

$\sigma_{\square} = 64 \text{ dm}$

PRAVOKOTNIK

 $b = ?$
 $a = 12 \text{ dm}$

$P_{\square} = P_{\square} = 256 \text{ dm}^2$

$\sigma_{\square} = 2 \cdot a + 2 \cdot b$

$\sigma_{\square} = 2 \cdot 12 + 2 \cdot 21,3$

$\sigma_{\square} = 24 + 42,6$

$\sigma_{\square} = 66,6 \text{ dm}$

$P_{\square} = P_{\square}$

$P_{\square} = a \cdot b$

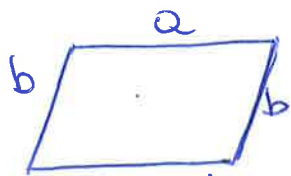
$256 = 12 \cdot b$

$b = 256 : 12$

$b = 21,3 \text{ dm}$

O: $\sigma_{\square} = 64 \text{ dm}$ in $\sigma_{\square} = 66,6 \text{ dm}$

10. a) PARALLELOGRAM



$$a = 12 \text{ dm} = 12 \text{ cm}$$

$$p = 1020 \text{ cm}^2$$

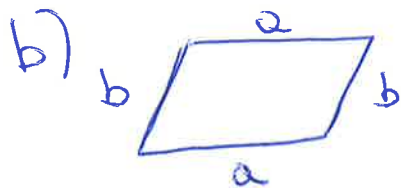
$$a = ?$$

$$p = a \cdot h_a$$

$$1020 = 12 \cdot h_a$$

$$h_a = 1020 : 12$$

$$h_a = 85 \text{ cm}$$



$$p = 40 \text{ cm}^2$$

$$h_b = 5 \text{ cm}$$

$$b = ?$$

$$p = b \cdot h_b$$

$$40 = b \cdot 5$$

$$b = 40 : 5$$

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

11. ROMB



a	h	e	f	p	σ
14	15	24	20	240	56
5,4	6	12	5,4	32,4	21,6
17,5	10	25	14	175	70

$$p = \frac{e \cdot f}{2} = \frac{24 \cdot 20}{2} = 240$$

$$p = a \cdot h$$

$$240 = a \cdot 15$$

$$a = 240 : 15$$

$$a = 16 \text{ cm}$$

$$\sigma = 4 \cdot a$$

$$\sigma = 4 \cdot 14$$

$$\sigma = 56 \text{ cm}$$

$$p = a \cdot h$$

$$32,4 = 5,4 \cdot h$$

$$h = 32,4 : 5,4$$

$$h = 6 \text{ cm}$$

$$p = \frac{e \cdot f}{2}$$

$$32,4 = \frac{12 \cdot f}{2}$$

$$32,4 = 6 \cdot f$$

$$f = 32,4 : 6$$

$$f = 5,4 \text{ cm}$$

$$p = \frac{e \cdot f}{2}$$

$$175 = \frac{e \cdot 14}{2}$$

$$175 = 7 \cdot e$$

$$e = 175 : 7$$

$$e = 25 \text{ cm}$$

$$\sigma = 4 \cdot a$$

$$70 = 4 \cdot a$$

$$a = 70 : 4$$

$$a = 17,5 \text{ cm}$$

$$\sigma = 4 \cdot a$$

$$\sigma = 4 \cdot 5,4$$

$$\sigma = 21,6 \text{ cm}$$

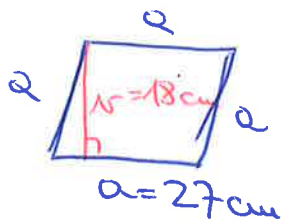
$$p = a \cdot h$$

$$175 = 17,5 \cdot h$$

$$h = 175 : 17,5$$

$$h = 10 \text{ cm}$$

12. ROMB

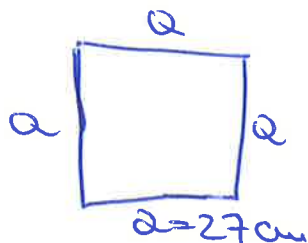


$$P_{\text{romb}} = a \cdot h$$

$$P_{\text{romb}} = 27 \cdot 18$$

$$P_{\text{romb}} = 486 \text{ cm}^2$$

KVADRAT



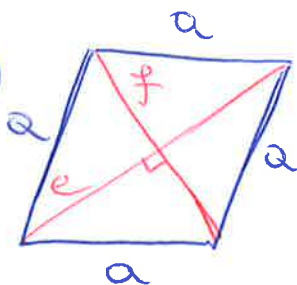
$$P_{\text{kvadrat}} = a \cdot a$$

$$P_{\text{kvadrat}} = 27 \cdot 27$$

$$P_{\text{kvadrat}} = 729 \text{ cm}^2$$

$$P_{\text{kvadrat}} - P_{\text{romb}} = 729 - 486 = \underline{\underline{243 \text{ cm}^2}}$$

13.



$$e = 16 \text{ dm}$$

$$f = 12 \text{ dm}$$

$$P = ?$$

$$a = ?$$

$$h = 9,6 \text{ dm}$$

$$P = \frac{e \cdot f}{2}$$

$$P = \frac{16 \cdot 12}{2} = 96$$

$$P = 96 \text{ dm}^2$$

$$P = a \cdot h$$

$$96 = a \cdot 9,6$$

$$a = 96 : 9,6$$

$$a = 10 \text{ dm}$$

14.

e	f	P
11 cm	16 cm	88 cm ²
16 cm	9,5 cm	76 cm ²
8 ³ / ₅ cm	6,05 cm	26 cm ²

$$P = \frac{e \cdot f}{2}$$

$$88 = \frac{11 \cdot f}{2}$$

$$88 = 5,5 \cdot f$$

$$f = 88 : 5,5$$

$$f = 16 \text{ cm}$$

$$P = \frac{e \cdot f}{2}$$

$$76 = \frac{e \cdot 9,5}{2}$$

$$76 = e \cdot 4,75$$

$$e = 76 : 4,75$$

$$e = 16 \text{ cm}$$

$$P = \frac{e \cdot f}{2}$$

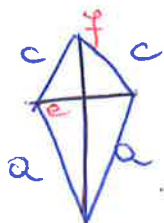
$$26 = \frac{8,6 \cdot f}{2}$$

$$26 = 4,3 \cdot f$$

$$f = 26 : 4,3$$

$$f = 6,05 \text{ cm}$$

15.



$$a = 45 \text{ mm}$$

$$c = 30 \text{ mm}$$

$$f = 6,5 \text{ cm} = 65 \text{ mm}$$

$$e = 4 \text{ cm} = 40 \text{ mm}$$

$$\sigma = 2 \cdot a + 2 \cdot c$$

$$\sigma = 2 \cdot 45 + 2 \cdot 30$$

$$\sigma = 90 + 60$$

$$\sigma = 150 \text{ mm}$$

$$p = \frac{e \cdot f}{2}$$

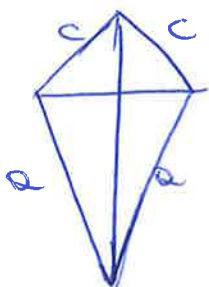
$$p = \frac{40 \cdot 65}{2}$$

$$p = 1300 \text{ mm}^2$$

$$\sigma = ?$$

$$p = ?$$

16.



$$a = 2,2 \text{ dm}$$

$$c = 1,4 \text{ dm}$$

$$\sigma = ?$$

KOLIKO m TRAKU?

IŠĆENO OBSEG!

$$\sigma = 2 \cdot a + 2 \cdot c$$

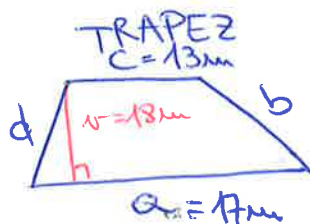
$$\sigma = 2 \cdot 2,2 + 2 \cdot 1,4$$

$$\sigma = 4,4 + 2,8$$

$$\sigma = 7,2 \text{ dm} = 0,72 \text{ m}$$

O: 0,72 m traku.

17.



koliko m²? Iščemo ploščina

$$p = \frac{a+c}{2} \cdot h$$

$$p = \frac{17+13}{2} \cdot 18$$

$$p = \frac{30}{2} \cdot 18$$

$$p = 15 \cdot 18$$

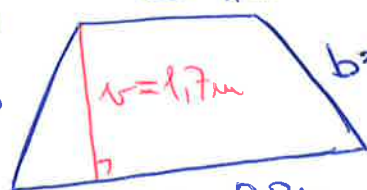
$$p = 270 \text{ m}^2$$

O: Meri 270 m².

18.

ENAKOKRAJ TRAPEZ

$$c = 4,2 \text{ m}$$



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

$$p = ?$$

$$p = \frac{a+c}{2} \cdot h$$

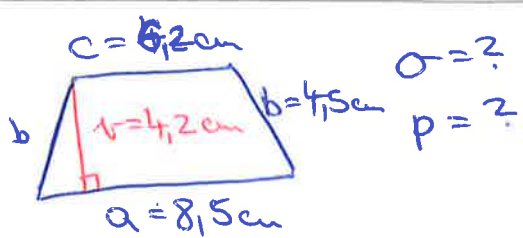
$$p = \frac{0,8+4,2}{2} \cdot 1,7$$

$$p = \frac{5,1}{2} \cdot 1,7$$

$$p = 2,55 \cdot 1,7$$

$$p = 4,335 \text{ m}^2$$

19.



$$\sigma = a + 2 \cdot b + c$$

$$\sigma = 8,5 + 2 \cdot 4,5 + 6,2$$

$$\sigma = 8,5 + 9 + 6,2$$

$$\sigma = 17,5 + 6,2$$

$$\sigma = 23,7 \text{ cm}$$

$$p = \frac{a+c}{2} \cdot h$$

$$p = \frac{8,5+6,2}{2} \cdot 4,2$$

$$p = \frac{14,7}{2} \cdot 4,2$$

$$p = 7,35 \cdot 4,2$$

$$p = 30,87 \text{ cm}^2$$

20.

a) $p = 533 \text{ m}^2$

$s = 32,5 \text{ m}$
 $r = ?$
 srednica

$$p = s \cdot r$$

$$533 = 32,5 \cdot r$$

$$r = 533 : 32,5$$

$$r = 16,4 \text{ m}$$

b) $p = 52,5 \text{ m}^2$

$$r = 3,5 \text{ m}$$

$$Q = 18,5 \text{ m}$$

$$c = ?$$

$$p = \frac{a+c}{2} \cdot r$$

$$52,5 = \frac{18,5+c}{2} \cdot 3,5$$

$$52,5 = (18,5+c) \cdot 1,75$$

$$18,5+c = 52,5 : 1,75$$

$$18,5+c = 30$$

$$c = 30 - 18,5$$

$$c = 11,5 \text{ m}$$