

Inicijalni test **BR.11.** za PRVI RAZRED
za sve gimnazije i jače tehničke škole

1.

<u>radnici</u>	<u>dani</u>
2	6
x	2

$x : 2 = 6 : 2$
 $2x = 6 \cdot 2$ /2
 $x = 6$

*radi se o obrnutoj
proporcionalnosti.*

*Da se polje okopa za 2 dana
potrebno je 6 radnika.*

2. a) $x \cdot (3x - y) - y \cdot (2x - 3y) =$
 $= x \cdot 3x - xy - 2xy + 3y \cdot y =$
 $= 3x^2 - xy - 2xy + 3y^2 =$
 $= 3x^2 - 3xy + 3y^2$

b) $(2x - 3) \cdot (x + 2) = 2x \cdot (x + 2) - 3 \cdot (x + 2) =$
 $= 2x \cdot x + 2x \cdot 2 - 3 \cdot x - 3 \cdot 2 =$
 $= 2x^2 + 4x - 3x - 6 =$
 $= 2x^2 + x - 6$

c) $a \cdot 5a - (a - 2) \cdot (5a + 3) = 5a^2 - (a \cdot (5a + 3) - 2 \cdot (5a + 3)) =$
 $= 5a^2 - (5a^2 + 3a - 10a - 6) =$
 $= 5a^2 - 5a^2 - 3a + 10a + 6 =$
 $= 7a + 6$

3. $c = 5 \text{ cm}, b = 3 \text{ cm}$

PITAGORIN TEOREM GLAS 1

$$c^2 = a^2 + b^2$$

$$5^2 = a^2 + 3^2$$

$$25 = a^2 + 9$$

$$25 - 9 = a^2$$

$$16 = a^2$$

$$a^2 = 16$$

$$a = \underline{\underline{4 \text{ cm}}}$$

4) a) $3\sqrt{5} + 2\sqrt{5} + \sqrt{5} - 4\sqrt{5} =$

$$= (3 + 2 + 1 - 4) \cdot \sqrt{5} =$$

$$= 2\sqrt{5}$$

b) $3\sqrt{2} + 2\sqrt{8} - 2\sqrt{32} =$

$\rightarrow 2\sqrt{8} = 2\sqrt{4 \cdot 2} = 2 \cdot \sqrt{4} \cdot \sqrt{2} = 2 \cdot 2 \cdot \sqrt{2} = 4\sqrt{2}$

$\rightarrow \sqrt{32} = \sqrt{16 \cdot 2} = \sqrt{16} \cdot \sqrt{2} = 4\sqrt{2}$

$$= 3\sqrt{2} + 4\sqrt{2} - 2 \cdot 4\sqrt{2} =$$

$$= (3 + 4 - 8)\sqrt{2} =$$

$$= -1 \cdot \sqrt{2}$$

$$= \underline{\underline{-\sqrt{2}}}$$

5. zad. [Video uputa >>](#)

6. $28\% \text{ od } 800 = \frac{28}{100} \cdot 800 = \frac{28 \cdot 8}{1} = 224$

7. OBUJAM = VOLUMEN $\Rightarrow V = a^3$

$$V = 8, \quad V = a^3$$

$$a^3 = 8$$

$$a^3 = 2^3$$

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

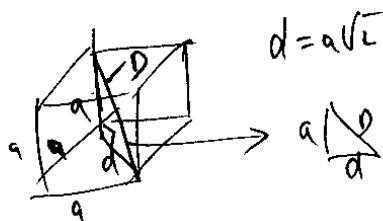
a) $a = 2 \text{ dm} = 20 \text{ cm}$

$$\text{Plošnja} = O, \quad O = 6 \cdot a^2$$

$$O = 6 \cdot 20^2 = 6 \cdot 400$$

$$O = 2400 \text{ cm}^2$$

b) PLOŠNJA DIAGONALA = D



$$d = a\sqrt{2}$$

$$D^2 = a^2 + d^2$$

$$D^2 = a^2 + (a\sqrt{2})^2$$

$$D^2 = a^2 + 2a^2$$

$$D^2 = \underline{\underline{3a^2}}, \quad a = 2 \text{ dm}$$

$$D^2 = 3a^2 = 3 \cdot 2^2 = 3 \cdot 4 = 12 \text{ dm}^2$$

$$D^2 = 12 \text{ dm}^2 \quad D = \sqrt{12} = \sqrt{4 \cdot 3} = \underline{\underline{2\sqrt{3} \text{ dm}}} \quad \text{2017.}$$

8. [video uputa >>](#)

19.

$$8. \quad F = 32 + \frac{9C}{5}, \quad F = 128$$

$$128 = 32 + \frac{9C}{5}$$

$$128 - 32 = \frac{9C}{5}$$

$$96 = \frac{9C}{5}$$

$$\frac{9C}{5} = 96 \quad / \cdot \frac{5}{9}$$

$$C = \frac{96}{1} \cdot \frac{5}{9} = \frac{480}{9}$$

$$C = 53.33333$$

$$C = \underline{\underline{53.33}}$$

9.

x = početni broj djece na igralištu = 12

x_1 = broj djece na kraju = 21

p = postotak = ?

$$x_1 = \frac{(100\% + p) \cdot x}{100}$$

$$21 = \frac{(100 + p) \cdot 12}{100} \quad / \cdot \frac{100}{12}$$

$$\frac{21 \cdot 100}{12} = 100 + p$$

$$175 = 100 + p$$

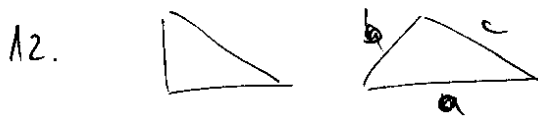
$$175 - 100 = p$$

$$p = 75\%$$

Broj djece se povećao za 75%

10. $\frac{15}{5} + \frac{40}{5} = 3 + 8 = 11$

11. $6\frac{1}{3} = \frac{6 \cdot 3 + 1}{3} = \frac{18 + 1}{3} = \frac{19}{3}$



$a = 0,32 \text{ km} = 32 \text{ cm}$
 $b = 1,2 \text{ dm} = 12 \text{ cm}$
 $c = 14 \text{ cm}$

$O_{\Delta} = a + b + c = 32 + 12 + 14$

$O_{\Delta} = 58 \text{ cm}$, $O_{\square} = O_{\Delta} = 58 \text{ cm}$

$O_{\square} = 4a$
 $4a = 58 / :4$
 $a = 14,5 \text{ cm}$

KVADRAT



$P_{\square} = a^2$

$P_{\square} = 14,5^2$

$P_{\square} = 14,5 \cdot 14,5$

$P_{\square} = 210,25 \text{ cm}^2$

2017.

13. a) $0.82 + 1.53 = 2.35$

$$\begin{array}{r} 1.53 \\ + 0.82 \\ \hline 2.35 \end{array}$$

b) $(1.8 : 0.6) + 6 : 2(2+1) =$
 $= \frac{18}{10} : \frac{6}{10} + 6 : (2 \cdot 3)$
 $= \frac{18}{10} \cdot \frac{10}{6} + 6 : 6$
 $= 3 + 1 = 4$

14. c) $3.5 \cdot 5 + \frac{2}{7} = \frac{35}{10} \cdot \frac{5}{1} + \frac{2}{7} = \frac{35 \cdot 7 + 2 \cdot 2}{14} =$
 $= \frac{245 + 4}{14} = \frac{249}{14} = 17 \frac{11}{14}$

d) $4 - \{2 - [2 \cdot 2 + 2(3-2)]\} =$
 $= 4 - \{2 - [4 + 2 \cdot 1]\}$
 $= 4 - \{2 - (4+2)\}$
 $= 4 - \{2 - (6)\}$
 $= 4 - \{2 - 6\} = 4 - \{-4\}$
 $= 4 + 4$
 $= 8$

14.

$$x+y = 24, \quad x-y = 6$$

~~Sistem~~
↓

$$\left. \begin{array}{r} x+y=24 \\ x-y=6 \end{array} \right\} +$$

$$2x+0 = 30 /$$

$$2x = 30 \quad /:2$$

$$x = 15 //$$

$$x+y = 24$$

$$15+y = 24$$

$$y = 24 - 15$$

$$y = 9 //$$

$$x=15, \quad y=9$$

15.



$$\Rightarrow P = a \cdot b$$

16.
$$\frac{-2x}{3} + \frac{x+1}{2} = x-3 \quad / \cdot 6$$
$$\frac{-2x}{3} \cdot 6 + \frac{x+1}{2} \cdot 6 = (x-3) \cdot 6$$
$$-2x \cdot 2 + (x+1) \cdot 3 = 6x - 18$$
$$-4x + 3x + 3 = 6x - 18$$
$$-4x + 3x - 6x = -18 - 3$$
$$-7x = -21 \quad / : (-7)$$
$$x = 3$$

17.

a) $3 \text{ kg} = 3 \cdot 1000 = 3000 \text{ g}$

b) $12 \text{ l} = 12 \text{ dm}^3$ Pazi: $\text{l} = \text{dm}^3$

c) $600 \text{ kg} = \frac{600}{1000} \text{ t} = \frac{6}{10} \text{ t} = 0,6 \text{ t}$

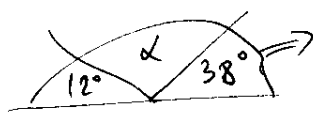
d) $1,5 \text{ h} = 1,5 \cdot 60 \text{ min} = 90 \text{ min}$

e) $20 \text{ dm}^2 = 20 \cdot 100 \text{ cm}^2 = 2000 \text{ cm}^2$

f) $0,012 \text{ m}^3 = 0,012 \cdot 1000 \text{ dm}^3 = 12 \text{ dm}^3 = 12 \text{ L}$

g) $3^\circ = 3 \cdot 60' = 180 \text{ min}$

18.



180°

$$180^\circ = 12^\circ + \alpha + 38^\circ$$

$$180^\circ - 12^\circ - 38^\circ = \alpha$$

$$130^\circ = \alpha$$

$$\alpha = 130^\circ$$

19. je ustvari zadatak br.8 vidi rješenje 8. zad.

21.

$$\begin{aligned} \text{a)} \quad (2x-3y)^2 &= (2x)^2 - 2 \cdot 2x \cdot 3y + (3y)^2 = \\ &= 2^2 x^2 - 2 \cdot 2 \cdot 3 \cdot x \cdot y + 3^2 y^2 = \\ &= 4x^2 - 12xy + 9y^2 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad (-x-2)^2 &= (-1 \cdot (x+2))^2 = \\ &= (-1)^2 \cdot (x+2)^2 = \\ &= 1 \cdot (x^2 + 2 \cdot x \cdot 2 + 2^2) = \\ &= x^2 + 4x + 4 \end{aligned}$$

ILI OVAKO

$$\begin{aligned} (-x-2)^2 &= (-x-2)(-x-2) = -x \cdot (-x-2) - 2 \cdot (-x-2) = \\ &= -x \cdot (-x) - x \cdot (-2) - 2 \cdot (-x) - 2 \cdot (-2) = \\ &= x^2 + 2x + 2x + 4 = \\ &= x^2 + 4x + 4 \end{aligned}$$

$$\begin{aligned} \text{c)} \quad (2x-5)(2x+5) &= (2x)^2 - 5^2 = \\ &= 2^2 x^2 - 25 = \\ &= 4x^2 - 25 \end{aligned}$$