

Inicijalni test BR 1.- šk.g. 2017./18. za PRVI RAZRED  
za sve gimnazije i jače tehničke škole

1.      radnici      dani      *radi se o obrnutoj*  
          $\uparrow$  2                          6  $\downarrow$       *proporcionalnosti.*  
         x                                  2

$$x : 2 = 6 : 2$$
$$2x = 6 \cdot 2 \quad | : 2$$
$$x = 6$$

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

2. a)  $(2x-3y)^2 = (2x)^2 - 2 \cdot 2x \cdot 3y + (3y)^2 =$   
 $= 2^2 x^2 - 2 \cdot 2 \cdot 3 \cdot xy + 3^2 y^2 =$   
 $= 4x^2 - 12xy + 9y^2$

b)  $(-x-2)^2 = (-1 \cdot (x+2))^2 =$   
 $= (-1)^2 \cdot (x+2)^2 =$   
 $= 1 \cdot (x^2 + 2 \cdot x \cdot 2 + 2^2) =$   
 $= x^2 + 4x + 4$

*ILI OVAKO*

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

c)  $(2x-5)(2x+5) = (2x)^2 - 5^2 =$   
 $= 2^2 x^2 - 25 =$   
 $= 4x^2 - 25$

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

PITAGORIN TEOREM GLAS 1

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

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

$$25 = a^2 + 9$$

$$25 - 9 = a^2$$

$$16 = a^2$$

$$a^2 = 16$$

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

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

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

$$= 2\sqrt{5}$$

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

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

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

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

$$= -\sqrt{2}$$

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

7.  $\text{OBJEM} = \text{VOLUMEN} \Rightarrow V = a^3$

$V = 8, V = a^3$

$a^3 = 8$

$a^3 = 2^3$

$a = 2 \text{ dm}$

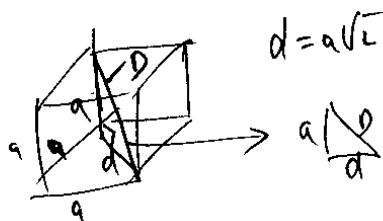
a)  $a = 2 \text{ dm} = 20 \text{ cm}$

$\text{Plošnja} = O, O = 6 \cdot a^2$

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

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

b)  $\text{PROMER DAGONA} = D$



$d = a\sqrt{2}$

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

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

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

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

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

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

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

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

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

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

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

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

$$C = 53.33333$$

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

9.  $x =$  početni broj djece na igralištu  $= 12$   
 $x_1 =$  broj djece na kraju  $= 21$   

---

 $p =$  postotak  $= ?$

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

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

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

$$175 = 100 + p$$

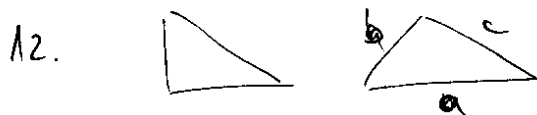
$$175 - 100 = p$$

$$p = 75\%$$

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.

$$\begin{array}{l} x+y = 24 \quad , \quad x-y = 6 \\ \underbrace{\hspace{10em}}_{\text{SISYXV}} \\ \downarrow \\ \begin{array}{r} x+y = 24 \\ x-y = 6 \end{array} \quad \left. \vphantom{\begin{array}{r} x+y = 24 \\ x-y = 6 \end{array}} \right\} + \\ \hline 2x + 0 = 30 \quad / \\ 2x = 30 \quad / : 2 \\ x = 15 // \end{array}$$
$$\begin{array}{l} x+y = 24 \\ 15+y = 24 \\ y = 24-15 \\ y = 9 // \end{array}$$

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

15.



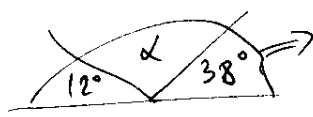
$\Rightarrow P = a \cdot b$

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.



$180^\circ$

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

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

$$130^\circ = \alpha$$

$$\alpha = 130^\circ$$

