

6. KONTROLNA NALOGA

1. J. 29. 5. 2000

B

1.) Univerzalna množica je množica celih števil.

$$A = \{x; -4 < x < 2\}$$

$$B = \{x; 1 \leq x < n\}$$

Določi n tako, da bo $A \cup B = \{-3, -2, -1, 0, 1, 2, 3\}$.

$$n = 3$$

(5)

2.) Razstavi: $8x^3 - 1 =$

(5)

3.) Določi največji skupni delitelj števil 561, 723.

$$D(x, y) = 3 \text{ ROKLES EV. AL}$$

(5)

4.) Poenostavi: 2

$$\left(\frac{5x+7}{2x-1} - \frac{1}{(5x-7)(2x-3)^{-1}} \right) : \frac{14-9x}{25x^2-49} =$$

$$\left(\frac{2x-1}{5x+7} - \frac{1}{\frac{5x-7}{2x-3}} \right) : \frac{14-9x}{(5x-7)(5x+7)} =$$

(10)

$$\frac{2x-1}{5x+7} - \frac{2x-3}{5x-7} = \frac{(2x-1)(5x-7) - (2x-3)(5x+7)}{(5x+7)(5x-7)} = \frac{10x^2 - 14x - 10x^2 - 21x + 21}{14-9x} = \frac{-18x+28}{14-9x}$$

5.) Poenostavi:

$$6x^5 y^{-7} z^{-1} : ((3x^{-1} y^{-3})^4 \cdot (4x^{-6} y z^4)^{-1}) =$$

$$\frac{6x^5}{y^7 z^4} : \left(\frac{3}{x y^3} \right)^4 \cdot \left(\frac{4 y z^4}{x^6} \right)^{-1} =$$

$$\frac{6x^5}{y^7 z^4} : \left(\frac{81}{x^4 y^{12}} \right) \cdot \left(\frac{x^6}{4 y z^4} \right) =$$

$$\frac{6x^5}{y^7 z^4} \cdot \frac{x^6}{81} \cdot \frac{4 y z^4}{x^6} = \frac{24 x^5 y^6}{81}$$

(10)

6.) Izračunaj: $\frac{2}{1-\sqrt{3}} + \frac{3}{\sqrt{3}} + (1-\sqrt{3})^2 =$

(10)

$y = -\frac{2}{3}x + 2$

7.) Skozi presečišče premic $2x + 3y = 6$, $x - 6y = 18$ položi premico, ki je pravokotna na premico $\frac{x}{2} - \frac{y}{3} = 1$. Zapiši njeno enačbo.

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$3y = -2x + 6 / :3$

$y = -\frac{2}{3}x + 2$

$-6y = -x + 18 / :(-6)$

$y = \frac{x}{6} - 3$

$-\frac{2}{3}x + 2 = \frac{x}{6} - 3 / \cdot 6$

$-2x + 12 = x - 18$

$-3x = -30 / :(-3)$

$x = 10$

(15)

$y = \frac{10}{6} - 3 = \frac{10-18}{6} = \frac{-8}{6} = -\frac{4}{3}$

8.) Obravnaj neenačbo: $x + 2a(x+1) - 3$

$x = 2a(x+1) - 3$
 $a \neq \frac{1}{2}$
 $x = \frac{2a-3}{2a-1}$

PRINZIP
1
2
3

$\frac{x}{2} - \frac{y}{3} = 1 / \cdot 6$

$3x - 2y = 6$

$-2y = 6 - 3x / :(-2)$

$y = -3 + \frac{3}{2}x$

$y = -\frac{3}{2}x + 12$

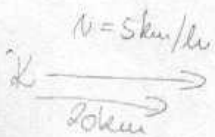
(10)

$-\frac{8}{6} - \frac{32}{3} = k$
 $-\frac{8-64}{6} = k$
 $-\frac{56}{6} = k$
 $-12 = k$

9.) Reši enačbo: $|x-2| + 3|x| = 2$
 $x = 0$

(15)

10.) Ob 6. uri odide iz kraja K pešec s hitrostjo 5 km/h, ob 9. uri pa kolesar iz istega kraja v isto smer s hitrostjo 20 km/h. Kdaj in kje bo kolesar dohitel pešca?



10h po 20km

$S = v \cdot t$

$5 \text{ km/h} \cdot X = 20 \text{ km/h} \cdot (X-3)$

$5x = 20x - 60$

$60 = 15x$

$x = 4 \text{ h}$

(15)