

RJEŠENJA ZADATAKA PRIPREMA II ŠPZ - GRUPA A

Napomena ovdje je bila grepška u zadatku, umjesto x u nazivniku bilo je a.

$$1) \frac{5x-2y}{4y^2-25x^2} = \frac{5x-2y}{(2y-5x)(2y+5x)} = \frac{-\cancel{(2y-5x)}}{\cancel{(2y-5x)}(2y+5x)} = \frac{-1}{(2y+5x)} \quad (3 \text{ boda})$$

$$\begin{aligned} \frac{3}{2x^2+2x} + \frac{2x-1}{x^2-1} &= \frac{3}{2x(x+1)} + \frac{2x-1}{(x+1)(x-1)} \\ &= \frac{3(x-1) + (2x-1)2x}{2x(x+1)(x-1)} = \frac{3x-3+4x^2-2x}{2x(x+1)(x-1)} \end{aligned}$$

$$\begin{aligned} 2) \frac{4x^2+x-3}{2x(x+1)(x-1)} &\stackrel{\substack{\text{brojnik sa strane} \\ \text{rastavimo na faktore}}}{=} \frac{\cancel{(x+1)}(4x-3)}{2x(x-1)\cancel{(x+1)}} \quad (9 \text{ bodova}) \\ &= \frac{4x-3}{2x(x-1)} \end{aligned}$$

$$4x^2+x-3 = \underbrace{4x^2+4x}_{zaj 4x} - \underbrace{3x-3}_{zaj -3}$$

$$\begin{aligned} \text{Rastavljanje na faktore brojnika} &= 4x(x+1)-3(x+1) \\ &= (x+1)(4x-3) \end{aligned}$$

$$3) \frac{x^2-x}{2x+2} \cdot \frac{x^2+2x+1}{x^2-1} = \frac{x\cancel{(x-1)}}{2\cancel{(x+1)}} \cdot \frac{\cancel{(x+1)}^3}{\cancel{(x+1)}\cancel{(x-1)}} = \frac{x}{2} \quad (5 \text{ bodova})$$

$$\begin{aligned} 4) 2-3x+\frac{1-2x}{5} &= \frac{(2-3x)\cdot 5 + 1-2x}{5} \\ &= \frac{10-15x+1-2x}{5} = \frac{-17x+11}{5} \quad (3 \text{ boda}) \end{aligned}$$

$$\begin{aligned}
& \left(\frac{2}{a} - \frac{a+4}{a-2} \right) \cdot \frac{a^2}{a^3 - 8} = \frac{2(a-2) - (a+4)a}{a(a-2)} \cdot \frac{a^2}{a^3 - 2^3} \\
&= \frac{2a-4-a^2-4a}{a(a-2)} \cdot \frac{a^2}{(a-2)(a^2+2a+4)} \\
&= \frac{-a^2-2a-4}{a(a-2)} \cdot \frac{a^2}{(a-2)(a^2+2a+4)} \\
5) &= \frac{-\cancel{(a^2+2a+4)}}{\cancel{a}(a-2)} \cdot \frac{a^2}{(a-2)\cancel{(a^2+2a+4)}} \quad (10 \text{ bodova}) \\
&= \frac{-a}{(a-2)^2}
\end{aligned}$$

$$\begin{aligned}
& \left(\frac{a}{a^2-6a+9} + \frac{12}{a^2-3a} \right) \cdot \left(a + \frac{9}{a-6} \right) = \\
& \left(\frac{a}{(a-3)^2} - \frac{12}{a(a-3)} \right) \cdot \left(\frac{a(a-6)+9}{a-6} \right) = \\
&= \frac{a \cdot a - 12 \cdot (a-3)}{a(a-3)^2} \cdot \frac{a^2 - 6a + 9}{a-6} \\
6) &= \frac{a^2 - 12a + 36}{a(a-3)^2} \cdot \frac{(a-3)^2}{a-6} \quad (10 \text{ bodova}) \\
&= \frac{(a-6)^2}{a \cancel{(a-3)^2}} \cdot \frac{\cancel{(a-3)^2}}{a-6} = \frac{a-6}{a}
\end{aligned}$$