PREVERI SVOJE ZNANJE (po enem tednu tabora ☺) *9.r* Ime, priimek: _____

1. Če se da, izračunaj s PRAVILI (ne računaj na dolgo).

a) $(2x+3)(x-1) = 2x^2-2x+3x-3$
$= 2x^2+x-3$

b) $(2+y)(2-y) = 4-y^2$

c) $2xy(5x-2y) = 10x^2y-4xy^2$

č) $(a+5)^2 = a^2+10a+25$

d) $(\frac{a}{2}-19b)(\frac{a}{2}+19b) = \frac{a^2}{4}-361b^2$

e) $(5x-\frac{3}{4}y)^2 = 25x^2-\frac{15}{2}xy+\frac{9}{16}y^2$

2. Razstavi DO KONCA (faktoriziraj)!

a) $2x+2y = 2(x+y)$

b) $15-5a = 5(3-a)$

c) $x^2y+xy^2 = xy(x+y)$

č) $x^2-1 = (x-1)(x+1)$

d) $x^2-10x+21 =$
$= (x-3)(x-7)$

e) $81-b^2 = (9-b)(9+b)$

f) $2x^3+40x^2+200x =$
$= 2x(x^2+20x+100) =$
$= 2x(x+10)^2$

g) $5+x^2 =$ —

h) $a^4-11a^2+18 =$
$= (a^2-2)(a^2-9) =$
$= (a-\sqrt{2})(a+\sqrt{2})(a-3)(a+3)$

3. Dan je algebrski ulomek $\frac{2x+1}{x^2+x}$.

a) Določi za katere vrednosti ulomek NI definiran!

$x(x+1)$ $\quad x_1=0$, $x_2=-1$

b) Ulomek razširi z 2x. $\frac{(2x+1)\cdot 2x}{(x^2+x)2x} = \frac{4x^2+2x}{2x^3+2x^2}$

c) Od danega ulomka odštej ulomek $\frac{1}{x}$.

$\frac{2x+1}{\underset{x(x+1)}{x^2+x}} - \frac{1}{x} = \frac{2x+1-(x+1)}{x(x+1)} = \frac{2x+1-x+1}{x(x+1)} = \frac{x+2}{x(x+1)}$

Č) Ulomek deli z ulomkom $\frac{4x^2-1}{x^3-x}$. $\frac{\cancel{(2x+1)}}{\cancel{x}(x+1)} \cdot \frac{\cancel{x}(x^2-1)}{(2x-1)\cancel{(2x+1)}} = \frac{\cancel{(x-1)}\cancel{(x+1)}}{\cancel{(x+1)}(2x-1)} = \frac{x-1}{2x-1}$

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