Ime, priimek: **REŠITVE**

1. Razstavi DO KONCA (faktoriziraj)!

a) $xy + x =$

$$x(y + 1)$$

b) $2x - 2a =$

$$2(x - a)$$

c) $144a^2 - 81 =$

$$= (12a - 9)(12a + 9)$$

f) $2x^3 + 40x^2 + 200x =$

$$2x(x^2 + 20x + 100) =$$
$$2x(x + 10)^2$$

g) $x^2 + 1 =$

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h) $a^4 - 7a^2 - 18 =$

$$(a^2 - 9)(a^2 + 2) =$$
$$= (a + 3)(a - 3)(a^2 +$$

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

a) Določi za katere vrednosti **ulomek NI definiran!**

$$x^2 - 1 = 0 \qquad (x + 1)(x - 1) = 0 \quad \longrightarrow \quad x - 1 = 0 \Rightarrow x_1 = 1$$
$$x + 1 = 0 \Rightarrow x_2 = -1$$

b) **Ulomek** razširi z x.

$$\frac{(2x + 1) \cdot x}{(x^2 - 1) \cdot x} = \frac{2x^2 + x}{x^3 - x}$$

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

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

Č) **Ulomek** množi z ulomkom $\frac{x^2 + x}{4x^2 + 4x + 1}$.

$$\frac{(2x + 1) \cdot (x^2 + x)}{(x^2 - 1) \cdot (4x^2 + 4x + 1)} = \frac{(2x + 1) \cdot x(x + 1)}{(x - 1)(x + 1) \cdot (2x + 1)^2} = \frac{x}{(x - 1)(2x + 1)}$$

prvi

3. z ekvivalentnim preoblikovanjem reši enačbi, pri drugi naredi <u>preizkus</u>!

a) $x - 8 + 4x = -2 + 3x + 4$

$$5x - 8 = 3x + 2 \quad / -3x, +8$$
$$2x = 10$$
$$x = 5 \qquad R = \{5\}$$

$$5 - 8 + 20 = -2 + 15 + 4$$
$$17 = 17 \checkmark$$

b) $(2x - 5)^2 - 14 = (x - 3)(4x - 7) + 2$

$$4x^2 - 20x + 25 - 14 = 4x^2 - 7x - 12x + 21 + 2$$
$$4x^2 - 20x + 11 = 4x^2 - 19x + 23$$
$$-x = 12$$
$$x = -12$$

$$R = \{-12\}$$