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Druga pisana provjera
Znanja (algebarski izrazi)

20/20

1. Posjednostavi

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

$$(x^2 - 4y^2) - (4x^2 - y^2) \quad (+1)$$

$$x^2 - 4y^2 - 4x^2 + y^2$$

$$-3x^2 - 3y^2 \quad (+1)$$

2. Provedi kvadriranje

$$a) (10a-b)^2 = 100a^2 - 20ab + b^2 \quad (+1)$$

$$b) (4a+5)^2 = 16a^2 + 40a + 25 \quad (+1)$$

3. Rašpiši

$$\left(\frac{1}{2}a+b\right)^2 = \frac{1}{4}a^2 + 2 \cdot \frac{1}{2}ab + b^2 = \frac{1}{4}a^2 + ab + b^2$$

4.

$$(4a^2 - 4a + 1)(a+1) - (4a^2 + 4a + 1)(a-1) = (8a^3 + 4a^2 - 4a^2 - 4a + a + 1) - (8a^3 - 4a^2 + 4a^2 - 4a + a - 1)$$

$$= (8a^3 - 3a + 1) - (8a^3 - 3a - 1) \quad (+1)$$

$$= 8a^3 - 3a + 1 - 8a^3 + 3a + 1$$

$$= 2 \quad (+1)$$

5. Riješi

(+1)

$$\begin{aligned}x^6y^2 + 2x^2 + 2x^4y^4 + x^2y^6 &= x^2y^2(x^4y^4) + 2x^4y^4(1-1) \\ &= x^2y^2(x^4+y^4) (+1)\end{aligned}$$

$$6. \quad \frac{3a-1}{a^2b} - \frac{3b-1}{ab^2} = \frac{(3a-1)b - a(3b-1)}{a^2b^2} = \frac{3ab - b - 3ab + a}{a^2b^2} = \frac{a-b}{a^2b^2}$$

$$7. \quad \frac{a^2-b^2}{a^3+b^3} - \frac{a-b}{a^2-ab+b^2} = \frac{(a-b)(a+b)}{(a+b)(a^2-ab+b^2)} - \frac{a-b}{a^2-ab+b^2} = \frac{a-b-a+b}{a^2-ab+b^2} = 0$$

$$8. \quad (a+2b)(b+c-1) + (2a+b)(b+c-1) = (b+c+1)(a+2b+2a-b) \\ = (b+c+1)(3a+b)$$

$$9. \quad \frac{a^2+ab}{ab+b^2} = \frac{a(a+b)}{b(a+b)} = \frac{a}{b}$$

