PISANA PROVJERA

Nika Jukić, Ana Vlašić, Ivon Lučić, Klara Veselić 1.d

ALGEBARSKI IZRAZI

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1. Razvrstaj: $3x + \frac{1}{2}a^2$, $3x - \frac{1}{2}a^2 + \sqrt{3}$, $7y$, $2y + 9c^3$, a^2.

MONOMI	BINOMI	TRINOMI
$7y$	$3x + \frac{1}{2}a^2$	$3x - \frac{1}{2}a^2 + \sqrt{3}$
a^2	$2y + 9c^3$	

(+1) (+1) (+1)

2. Izračunaj:

a) $(4a+5)^2 = (4a)^2 + 2 \cdot 4a \cdot 5 + 5^2$

$= 16a^2 + 40a + 25$ (+2)

b) $\left(\frac{2}{3}a^2b^2 - 5\right)^3 = \left(\frac{2}{3}a^2b^2\right)^3 - 3 \cdot \left(\frac{2}{3}a^2b^2\right) \cdot 5 + 3 \cdot \frac{2}{3}a^2b^2 \cdot 5^2 - 5^3$

$= \frac{8}{27}a^6b^6 - 10a^4b^4 + 50a^2b^2 - 125$ (+2)

c) $(a+5)(a-5) = a^2 - 25$ (+1)

d) $8x^3 + 27 = (2x+3)\left((2x)^2 + 2x \cdot 3 + 3^2\right)$

$= (2x+3)(4x^2 + 6x + 9)$ (+2)

3. Izluči:

a) $6a^3b + 8a^2b^3 = 2a^2b(3a + 4b^2)$ (+1)

b) $21a^3b^3 + 35a^3b^3c - 28a^2b^2c^2 = 7a^2b^2(3ab + 5abc - 4c^2)$ (+1)

4. Rastavi na faktore.

$(1+abc)(a+b+c) - (1+abc)(a-b-c) = (1+abc) \cdot (a+b+c) - (a+b-c)$ (+1)

$= (1+abc)(a+b+c-a+b+c)$

$= (1+abc) \cdot (2b+2c)$

$= (1+abc) \cdot 2(b+c)$ (+1)

$= 2(1+abc)(b+c)$ (+1)

5. Zapiši u obliku umnoška.

$$(a^2+1)^2 - 4a^2 = (a^2+1-2a)(a^2+1+2a)$$
$$= (a^2-2a+1)(a^2+2a+1) \quad (+1)$$
$$= (a-1)^2(a+1)^2$$

6. Skrati razlomak.

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

7. Izračunaj:

$$\left(2a - \frac{10a-9}{2a-1}\right) \cdot \frac{1-2a}{9-4a^2} = \frac{2a\cdot(2a-1)-(10a-9)}{2a-1} \cdot \frac{1-2a}{9-4a^2} \quad (+1)$$
$$= \frac{2a\cdot(2a-1)-(10a-9)}{2a-1} \cdot \frac{-(2a-1)}{9-4a^2}$$
$$= \frac{2a\cdot(2a-1)-(10a-9)}{2a-1} \cdot \frac{-(2a-1)}{(3-2a)(3+2a)} \quad (+1)$$
$$= \frac{4a^2-2a-10a+9}{2a-1} \cdot \frac{-(2a-1)}{-(2a-3)(3+2a)}$$
$$= 4a^2-12a+9 \cdot \frac{-1}{(-2a-3)(3+2a)}$$
$$= (2a-3)^2 \cdot \frac{-1}{-(2a-3)(3+2a)} \quad (+1)$$
$$= (2a-3) \cdot \frac{1}{3+2a}$$
$$= \frac{2a-3}{3+2a} \quad (+1)$$