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PISANA PROVJERA, TEST
(ALGEBARSKI IZRAZI)

/20

1.) IZRAČUNAJ:

a) $(7a+3b)^2 = (7a)^2 + 2\cdot 7a\cdot 3b + (3b)^2 = 49a^2 + 42ab + 9b^2$ (+1)

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

2.) IZRAČUNAJ:

a) $\left(\frac{4}{5}a+\frac{5}{6}b\right)^2 = \left(\frac{4}{5}a\right)^2 + \cancel{2}^{1}\cdot\frac{\cancel{4}^{1}}{\cancel{5}_{1}}a\cdot\frac{\cancel{5}}{\cancel{6}_{3}}b + \left(\frac{5}{6}b\right)^2 = \frac{16}{25}a^2 + \frac{4}{3}ab + \frac{25}{36}b^2$ (+1)

b) $(a^2b-ab^2)^2 = (a^2b)^2 - 2a^2b\,ab^2 + (ab^2)^2 = a^4b^2 - 2a^3b^3 + a^2b^4$ (+1)

3) ODREDI:

a) $(3a-5b)^3 = (3a)^3 - 3\cdot(3a)^2\cdot 5b + 3\cdot 3a\cdot(5b)^2 - (5b)^3 = 27a^3 - 135a^2b + 225ab^2 - 125b^3$ (+1)

b) $\left(2a^2-\frac{1}{6}\right)^3 = (2a^2)^3 - 3\cdot(2a^2)^2\cdot\frac{1}{6} + 3\cdot 2a^2\cdot\left(\frac{1}{6}\right)^2 - \left(\frac{1}{6}\right)^3$ (+1)

$= 8a^6 - 2a^4 + \frac{1}{6}a^2 - \frac{1}{216}$ (+1)

4)

a) $\left(\frac{1}{2}a-\frac{3}{4}bc\right)\cdot\left(\frac{1}{2}a+\frac{3}{4}bc\right) = \left(\frac{1}{2}a\right)^2 - \left(\frac{3}{4}bc\right)^2$ (+1)

b) $(13x-12yz)\cdot(13x+12yz) = (13x)^2 - (12yz)^2$ (+1)

c) $\left(\frac{2}{5}a^3-\frac{1}{4}b^3\right)\cdot\left(\frac{4}{25}a^6+\frac{1}{10}a^3b^3+\frac{1}{16}b^6\right) = \frac{8}{125}a^9 - \frac{1}{64}b^9$ (+1)

5) IZLUČI:

a) $(ab-1)(a+2b)-(1-ab)(2a+b) =$

$(ab-1)(a+2b)+(ab-1)(2a+b) =$ (+1)

$(ab-1)(a+2b+2a+b) = (ab-1)(3a+3b) = 3(ab-1)(a+b)$ (+1)

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

+1

$\frac{(x-2)^2+(x+2)^2-4x^2}{x(x+2)(x-2)} = \frac{x^2-4x+4+x^2+4x+4-4x^2}{x(x+2)(x-2)} = \frac{-2x^2+8}{x(x+2)(x-2)} = \frac{2(-x^2+4)}{x(x+2)(x-2)} =$

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

+1

7) $\frac{9}{1-9x^2} \cdot \left(x - \frac{x-1}{4}\right) = \frac{9}{(1-3x)\cdot(1+3x)} \cdot \frac{4x-(x-1)}{4} =$ +1

$\frac{9}{(1-3x)\cdot(1+3x)} \cdot \frac{3x+1}{4} = \frac{9}{1-3x} \cdot \frac{1}{4} = \frac{9}{4(1-3x)} = \frac{9}{4-12x}$ +1

+1 +1