IZRAZI – pregled poglavja

1. Zmnoži: a) $5xyz \cdot 9x^3yz^5 = 45x^4y^2z^6$

b) $7x^3 \cdot (-8xy^5) = -56x^4y^5$

c) $-2a^4b^6 \cdot (-3ab^2c) \cdot (-3a^2bc^2) = -18a^7b^9c^3$

$-2 \cdot (-3) \cdot (-3)$

2. Seštej oziroma odštej:

a) $6x - 3x + 9x - 11x - 4x = -3x$

b) $3a^2 - 7a^2 + 5a^2 + 4a^2 = 5a^2$

c) $4x^3 - 7x^2 + 8x - 4 - 7 - 4x + 3x^2 + 8x^3 = 12x^3 - 4x^2 + 4x - 11$

MINUS PRED OKLEPAJEM — PLUS PRED OKLEPAJEM

č) $-(9u^2 - 7u + 4) + (7u^2 + 15u - 9) =$

$= -9u^2 + 7u - 4 + 7u^2 + 15u - 9 = -2u^2 + 22u - 13$

d) $4a^2 - 8a - 7 + 3a^3 - (9a^3 - 7a^2 + 6a + 7) =$

$= 4a^2 - 8a - 7 + 3a^3 - 9a^3 + 7a^2 - 6a - 7 =$

$= -6a^3 + 11a^2 - 14a - 14$

3. Zmnoži:

a) $6x^3 \cdot (5x^2 - 4x + 7) = 30x^5 - 24x^4 + 42x^3$

b) $(3u^4 - 3u^3 + 2u) \cdot 2u = 6u^5 - 6u^4 + 4u^2$

c) $(-4a + 7) \cdot (-8a^2) = 32a^3 - 56a^2$

č) $(9a - 4) \cdot (5a + 6) = 45a^2 + 54a - 20a - 24 = 45a^2 + 34a - 24$

d) $(5x^3 - 4x^2 + 6x) \cdot (3x - 9) = 15x^4 - 12x^3 + 18x^2 - 45x^3 + 36x^2 - 54x = 15x^4 - 57x^3 + 54x^2 - 54x$

PRODUKT VSOTE IN RAZLIKE DVEH ENAKIH ČLENOV

e) $(8a + 9) \cdot (8a - 9) = (8a)^2 - 9^2 = 64a^2 - 81$

$(a \pm b)^2 = a^2 \pm 2ab + b^2$ – KVADRAT DVOČLENIKA

4. Izračunaj.

$(x + 5)^2 =$ $x^2+2\cdot x\cdot 5+5^2 = x^2+10x+25$

$(a - 9)^2 =$ $a^2-2\cdot a\cdot 9-9^2 = a^2-18a-81$

$(3x - 2)^2 =$ $(3x)^2-2\cdot 3x\cdot 2+2^2 = 9x^2-12x+4$

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

$(5x - 3)(2x + 1) =$ $10x^2+5x-6x-3 = 10x^2-x-3$

PRODUKT VSOTE IN RAZLIKE DVEH ENAKIH ČLENOV

$(a + 7)(a - 7) =$ $a^2-7^2 = a^2-49$

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

$(2x - 3y)^2 =$ $(2x)^2-2\cdot 2x\cdot 3y+(3y)^2 = 4x^2-12xy+9y^2$

$(4x - 5y)(4x + 5y) =$ $(4x)^2-(5y)^2 = 16x^2-25y^2$

$(-\frac{4}{5}x - 3)(-\frac{4}{5}x + 3) =$ $\left(-\frac{4}{5}x\right)^2-3^2 = \frac{16}{25}x^2-9$

$(a+b)(a-b) = a^2-b^2$

PRODUKT VSOTE IN RAZLIKE DVEH ENAKIH ČLENOV

5. Razstavi.

a) $15c^2 + 5c = 5c(3c+1)$

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

c) $x^2 + 0{,}8x + 0{,}16 = (x+0{,}4)^2$

d) $4x^2y^2 - z^2 = (2xy+z)(2xy-z)$

e) $(6p - 5s)c + (6p - 5s)d = (6p-5s)(c+d)$

h) $x^2 - 12x + 36 = (x-6)^2$

f) $3x^2 - 3x = 3x(x-1)$

i) $x^2 - 4y^2 = (x+2y)(x-2y)$

g) $4x^2 - 4x + 1 = (2x-1)^2$

6. Razstavi po Vietovem pravilu.

$a+b=7, a\cdot b=10$ a) $x^2 + 7x + 10 = (x+5)(x+2)$

$a+b=-2, a\cdot b=-8$ b) $x^2 - 2x - 8 = (x-4)(x+2)$

$a+b=11, a\cdot b=28$ c) $x^2 + 11x + 28 = (x+7)(x+4)$

d) $x^2 - 7x + 6 = (x-7)(x+6)$ $a+b=-7, a\cdot b=6$

7. Poenostavi izraza.

a) $2(a - 3) + 5(a + 2) =$

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

c) $(x + 3)(x - 6) - (x - 2)^2 =$

8. Poenostavi izraz in izračunaj njegovo vrednost za $x = -2$.

$3(4x - 5)^2 - (7 - x)(7 + x) - (-3x - 4)^2 - (7x - 1)(6x + 8) =$

(7) a) $2(a-3)+5(a+2)=$

$=2a-6+5a+10=$

$=7a+4$

b) $(x+7)^2+(x-3)^2$

$=x^2+2\cdot x\cdot 7+7^2+x^2-2\cdot x\cdot 3+3^2=$

$=x^2+14x+49+x^2-6x+9=$

$=2x^2+8x+58$

c) $(x+3)(x-6)-(x-2)^2=$

$=x^2-6x+3x-18-(x^2-2\cdot x\cdot 2+2^2)=$

$=x^2-6x+3x-18-x^2+4x-4=$

$=x-22$

(8) $3\cdot(4x-5)^2-(7-x)(7+x)-(-3x-4)^2-(7x-1)(6x+8)=$

KVADRAT DVOČLENIKA — PRODUKT VSOTE IN RAZLIKE DVEH ENAKIH ČLENOV — KVADRAT DVOČLENIKA — MNOŽENJE DVOČLENIKA Z DVOČLENIKOM

$=3\cdot(4x)^2-2\cdot 4x\cdot 5+5^2)-(7^2-x^2)-((-3x)^2-2\cdot(-3x)\cdot 4+4^2)-$

$-(42x^2+56x-6x-8)=$

$=3(16x^2-40x+25)-(49-x^2)-(9x^2+24x+16)-(42x^2+56x-6x-8)=$

$=48x^2-120x+75-49+x^2-9x^2-24x-16-42x^2-56x+6x+8=$

$=-2x^2-194x+18$ $\quad x=-2$

$=-2\cdot(-2)^2-194\cdot(-2)+18$

$=-2\cdot 4+388+18=$

$=-8+388+18=$

$=398$

IZRAZI – pregled poglavja

1. **Zmnoži:** a) $5\,xyz \cdot 9\,x^3yz^5 =$

   b) $7\,x^3 \cdot (-8\,xy^5) =$

   c) $-2\,a^4b^6 \cdot (-3\,ab^2c) \cdot (-3\,a^2bc^2) =$

2. **Seštej oziroma odštej:**

   a) $6\,x - 3\,x + 9\,x - 11\,x - 4\,x =$

   b) $3\,a^2 - 7\,a^2 + 5\,a^2 + 4\,a^2 =$

   c) $4\,x^3 - 7\,x^2 + 8\,x - 4 - 7 - 4\,x + 3\,x^2 + 8\,x^3 =$

   č) $-(9\,u^2 - 7\,u + 4) + (7\,u^2 + 15\,u - 9) =$

   d) $4\,a^2 - 8\,a - 7 + 3\,a^3 - (9\,a^3 - 7\,a^2 + 6\,a + 7) =$

3. **Zmnoži:**

   a) $6\,x^3 \cdot (5\,x^2 - 4\,x + 7) =$

   b) $(3\,u^4 - 3\,u^3 + 2\,u) \cdot 2\,u =$

   c) $(-4\,a + 7) \cdot (-8\,a^2) =$

   č) $(9\,a - 4) \cdot (5\,a + 6) =$

   d) $(5\,x^3 - 4\,x^2 + 6\,x) \cdot (3\,x - 9) =$

   e) $(8\,a + 9) \cdot (8\,a - 9) =$