PL – 9. ročník – Mocniny a odmocniny

1. Vypočítaj:

a) $a^2 + a^2 =$ b) $\frac{2}{3}m^2 + 3m^2 =$ c) $2x^3 - 5y^2 + 8y^2 - 7x^3 =$

d) $4a^2 - 3a + (7a^2 - 14a) =$ e) $8a^2 - 4b^2 - 5a^2 - (1 + 2b^2 - 3a^2) + 2 =$

2. Vynásob :

a) $a^2 \cdot a^4 =$ b) $3a^4 \cdot (-9a^3) =$ c) $3a^4 b^2 \cdot 4a^5 b^7 =$

d) $-\frac{7}{8}a^2b^3 \cdot \frac{4}{21}a^4 b^7 =$ e) $4{,}8a^2b \cdot 0{,}7a^3b^5c =$

f) $(6 - ab)^2 \cdot c^3 \cdot (6 - ab) \cdot c^2 =$ g) $(4 + x^2)\, yz^5 \cdot (4 + x^2)^3 \cdot y^3z^3 =$

3. Vydeľ :

a) $(3x - 2y)^6 : (3x - 2y)^4 =$ b) $26\, m^6 : 13\, m^2 =$

c) $\frac{2}{7}(5a - b)^8 : \frac{2}{21}(5a - b)^5 =$ d) $18a^5b^3 : (-2a^4b) =$

e) $(-42x^6y^7z^5) : (-21x^2y^5z^3) =$ f) $36x^4y^3z : 4x^3y =$

g) $(2a - 4b)^8 : (-4b + 2a)^2 =$ h) $(3a)^4 : (3a)^3 =$

4. Umocni :

a) $(-4a^3)^2 =$ b) $(-4y^2)^3 =$ c) $(6a^2 \cdot b^3)^3 =$

d) $(6a^2 - b)^3 =$ e) $(0{,}05a)^3 =$ f) $(3a^2b^2 \cdot 4a^3b^4)^2$

g) $\left(\frac{3r}{7s}\right)^4 =$ h) $\left(\frac{2m \cdot n}{m-n}\right)^3 =$ i) $\left(-\frac{8}{9} \cdot a\right) =$

5. Vypočítaj:

a) $3s^2 - 2s + s^2 - 7 + 2s =$

b) $-7^2a^2 + 40a^2 - 5a + (2a)^2 - 4a =$

c) $5x^3y^4z^2 \cdot (-4x^2y^5z) =$

d) $(5a)^2 \cdot (5a)^3 =$

e) $15c^{12} : (5c^8) =$

f) $2x^5y^3 : (5x^2y^6) =$

g) $(4p^3rs^2)^2 =$

h) $\left(\frac{2ab^2}{c^5}\right)^3 =$

i) $\frac{-8a^2bc^7}{-56a^2b^3c^4} =$

$11x^2 - (-6x) + (-5x^2) - (2x + 3x^2) =$

$3x^2y \cdot 5x^3y^4 =$

$(+24a^6b^3) : (-6a^5b^3) =$

$\frac{18a^3b^6c}{27a^2b^6c^4} =$

$(2m^4no^3)^3 =$

$\frac{3^2 \cdot 5^2}{9^2 \cdot 2^3} \cdot \frac{8^2 \cdot 2}{5} =$

$\frac{xy^3}{8y^3x^2} \cdot \left(\frac{4xy^2}{3x^3y}\right)^2 : \frac{x^2}{18yx^3} =$

2.

$3 \bullet \left(5a^2 - y + b^3\right) - \left(2a^2 + 2y - 3b^3\right) + \left(-a^2 - 4y + 2b^2\right) =$

Umocnite:

$(-12 + 2 \bullet 3)^7 =$

$\frac{1}{8} x^3 y^2 z \bullet 4xy^3 z^4 =$

$(5 - 4x)^2 \bullet (5 - 4x)^5 \bullet (5 - 4x)^y =$

$\left(-3ab^2\right) \bullet (-2ab)^3 \bullet \left(-a^2 b\right) =$

$\left(\frac{2}{3} ab^2\right)^3 : \left(\frac{4}{3^2} a^2 b\right)^2 =$

$\left(-\frac{3}{2}\right)^3 - \left[\left(-0{,}75 \bullet \frac{\sqrt{25}}{6} - \frac{3}{\sqrt{4}} \bullet 2 \bullet \sqrt{\frac{1}{36}}\right)\right] =$

3.

$-\left(x^3 - 2y + c^4\right) + 2\left(x^3 - y + 3c^4\right) + \left(-5x^3 + 3y - 8c^4\right) =$

Umocnite:

$(-5 \bullet 3 + 10)^5 =$

$\frac{2}{3} ab^4 c^2 \bullet 3a^4 bc^3 =$

$(5 + y) \bullet (5 + y)^z \bullet (5 + y)^{2z} =$

$\left(-3a^2 b\right)^2 \bullet \left(a^4 b^3\right) \bullet (-2ab)^3 =$

$\left(\frac{4}{5} cd^5\right)^2 : \left(\frac{2^2}{15} cd\right)^2 =$