KVADRIRANJE RACIONALNIH BROJEVA

1° *Kvadriranje racionalnih brojeva*

1) Kvadriraj:

a) 12^2, b) -9^2, c) $(-9)^2$, d) -3.7^2, e) $(-3.7)^2$.

2) Izračunaj:

a) $\frac{-7}{8^2}$, b) $\left(\frac{2}{3}\right)^2$, c) $\frac{-5^2}{4}$, d) $\left(-2\frac{2}{3}\right)^2$, e) $-\left(3\frac{1}{3}\right)^2$.

3) Izračunaj:

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

b) $-[9^2 - (-6)^2] =$

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

d) $\frac{1}{9} - \left(-\frac{1}{3}\right)^2 \cdot \frac{-1}{3} =$

4) Ako je $x = -2$, a $y = 0.4$, izračunaj vrijednost izraza: a) $y - (-2x)^2$, b) $x^2 - y - x$.

2° *Kvadriranje umnoška i količnika*

5) Primjenjujući pravilo za kvadriranje umnoška i količnika izračunaj:

a) $(5 \cdot 3)^2$, b) $(5 : 9)^2$, c) $-\left(\frac{14}{13}\right)^2 : \left(\frac{21}{26}\right)^2$, d) $\left(\frac{3}{5}\right)^2 \cdot \left(\frac{-1}{6}\right)^2$.

3° *Algebarski izrazi, kvadrat binoma*

6) Oslobodi se zagrada:

a) $(-9xyz)^2$,

b) $-2k\,(k + 8)$,

c) $-\frac{2}{3}x\left(\frac{9}{5}x - 2\right)$,

d) $(7x + y)(2y - 3x)$,

e) $(-3c - 7d)^2$,

f) $\left(-\frac{4}{5}x + 2\right)^2$.

7) Pojednostavni:

a) $(2x^2 - 3x) - [5x - (x + x^2)]$,

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

c) $(x - 1)(x + 2) - (2x + 1)(x - 1)$,

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

e) $y\,(y - 4) + (y - 1)(3y + 3) - 4(y^2 - y + 1)$,

f) $(2a - 11)^2 + (-4a - 3)^2 - (5a + 8)$.

Rješenja:

1) a) 144, b) –81, c) 81, d) –13.69, e) 13.69.

2) a) $\frac{-7}{64}$, b) $\frac{4}{9}$, c) $\frac{-25}{4}$, d) $\frac{64}{9}$, e) $-\frac{100}{9}$.

3) a) 14, b) –45, c) $\frac{-3}{8}$, d) $\frac{4}{27}$.

4) a) –15.6, b) 5.6.

5) a) $(5 \cdot 3)^2 = 5^2 \cdot 3^2 = 25 \cdot 9 = 225$, b) $(5 : 9)^2 = 5^2 : 9^2 = 25 : 81 = \frac{25}{81}$,

c) $-\left(\frac{14}{13}\right)^2 : \left(\frac{21}{26}\right)^2 = -\left(\frac{\cancel{14}^{2}}{\cancel{13}_{1}} \cdot \frac{\cancel{26}^{2}}{\cancel{21}_{3}}\right)^2 = -\left(\frac{4}{3}\right)^2 = -\frac{16}{9}$, d) $\left(\frac{3}{5}\right)^2 \cdot \left(\frac{-1}{6}\right)^2 = \left(\frac{\cancel{3}^{1}}{5} \cdot \frac{-1}{\cancel{6}_{2}}\right)^2 = \left(\frac{-1}{10}\right)^2 = \frac{1}{100}$.

6) a) $81x^2y^2z^2$, b) $-2k^2 - 16k$, c) $-\frac{6}{5}x + \frac{4}{3}$,

d) $-21x^2 + 11xy + 4y^2$, e) $9c^2 + 42cd + 49d^2$, f) $\frac{16}{25}x^2 - \frac{16}{5}x + 4$.

7) a) $3x^2 - 7x$, b) $7a^2b - 10ab^2$, c) $-x^2 + 2x - 1$,
d) $19x^2$, e) -7, f) $20a^2 - 25a + 122$.