RAČUNAJE IZRAZOV S POTENCAMI IN KORENI

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1. Izračunaj vrednosti izrazov:

A) $\sqrt{25}+12\cdot 10^3=$

$=5+12\cdot 1000=$

$=5+12000=$

$=12005$

2

$6^2\cdot 2^2-\sqrt{324}+9^2=$

$=12^2-18+81=$

$=144-18+81=$

$=225-18=207$

2

144
+ 81
225
- 18
207

B) $\sqrt{5^2-3^2}+\sqrt{64+36}-\sqrt{10^2+9^2+15}=$

$=\sqrt{25-9}+\sqrt{100}-\sqrt{100+81+15}=$

$=\sqrt{16}+10-\sqrt{196}=$

$=4+10-14=0$

3

$(2-7)^2:(7-8)^3=$

$=(-5)^2:(-1)^3=$

$=25:(-1)=-25$

2

C) $(-3)\cdot\sqrt{\frac{25}{9}}-(-7)\cdot\sqrt{\frac{16}{49}}+5\cdot\left(-\sqrt{3}\right)^2=$

$=(-3)\cdot\frac{5}{3}+7\cdot\frac{4}{7}+5\cdot 3=$

$=-5+4+15=14$

2

$\sqrt{0,64}\cdot\sqrt{1,44}+\left(\frac{3}{5}\right)^2\cdot\sqrt{2,25}=$

$=0,8\cdot 1,2+\frac{9}{25}\cdot 1,5=$

$=0,96+\frac{9}{25}\cdot\frac{15\cdot 3}{10\cdot 5}=$

$=0,96+\frac{27}{50}=$

$=\frac{96}{100}+\frac{54}{100}=$

$=\frac{150}{100}=1,5$

4

0,8·1,2
8
16
0,96

D) $\frac{-1}{2^3}\cdot\left(\sqrt{16+9}-\left((-2)^2+2\right)\right)=$

$=\frac{-1}{8}\cdot\left(\sqrt{25}-(4+2)\right)=$

$=-\frac{1}{8}\cdot(5-6)=$

$=-\frac{1}{8}\cdot(-1)=\frac{1}{8}$

3

2. Izračunaj razliko kvadratov števil $-1\frac{2}{3}$ in $2\frac{1}{2}$!

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

$=\left(\frac{5}{3}\right)^2-\left(\frac{5}{2}\right)^2=$ 1

$=\frac{25}{9}-\frac{25}{4}=\frac{100}{36}-\frac{225}{36}=-\frac{125}{36}=-3\frac{17}{36}$

1

25-9
25

36·3
108

4

3. Izračunaj vrednosti izrazov:

a) $\frac{\sqrt{3^3-\sqrt{2^4-4\cdot 3}}}{\left(4^3-2\cdot\sqrt{64}\right):\sqrt{36}+\sqrt{4}} = \frac{\sqrt{27-\sqrt{16-12}}}{(64-2\cdot 8):6+2} = \frac{\sqrt{27-2}}{(64-16):6+2} = \frac{5}{48:6+2} = \frac{5}{8+2} = \frac{5}{10} = \frac{1}{2}$

4

b) $\frac{3^7\cdot 6^7}{2^6\cdot 9^6} = \frac{18^7}{18^6} = 18$

2

c) $\frac{\left(2\cdot a\cdot b^2\right)^4}{\left(-2\cdot a^2\cdot b^3\right)^2} = \frac{16a^4b^8}{4a^4b^6} = 4b^2$

2

č) $\frac{25^5\cdot 5^3}{125^2} = \frac{(5^2)^5\cdot 5^3}{(5^3)^2} = \frac{5^{10}\cdot 5^3}{5^6} = \frac{5^{13}}{5^6} = 5^7$

2

4. Dane izraze zapiši kot potenco.

$a^{15} : a^9 =$ a^6

$b^7 : b =$ b^6

$x^6 : x^6 =$ $x^0 = 1$

$y^5 : y^7 =$ y^{-2}

$c^2 \cdot c^3 =$ c^5

$d \cdot d^4 \cdot d^3 =$ d^8

$\frac{x^4\cdot x^5}{x^{11}} =$ x^{-2}

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