

Machtsverheffingen

REKENREGELS ( zie werkboek pag 85 )

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| $a^{m}$ **.** $a^{n}= a^{m+n}$ | $3^{6}. 3^{2}= 3^{6+2}$ =$ 3^{8}$ | $3^{6}. 3^{-2}= 3^{6-2}$ =$ 3^{4}$ |
| $$\left(a^{m}\right)^{n}=a^{mn}$$ | $$\left(3^{6}\right)^{2 }= 3^{6.2}= 3^{12}$$ | $$\left(3^{-6}\right)^{2 }= 3^{-6.2}= 3^{-12}$$ |
| $$\left(ab\right)^{n}= a^{n}.b^{n}$$ | $$\left(ab\right)^{6}=a^{6}b^{6}$$ | $$\left(2a\right)^{6}= 2^{6}a^{6}=64a^{6}$$ |
| $$\left(\frac{a}{b}\right)^{n}= \frac{a^{n}}{b^{n}}$$ | $$\left(\frac{a}{b}\right)^{6}= \frac{a^{6}}{b^{6}}$$ | $$\left(\frac{a}{2}\right)^{6}= \frac{a^{6}}{2^{6} }= \frac{a^{6}}{64}$$ |
| $$a^{1}=a$$ |  | $$2^{1}=2$$ |
| $$a^{0}=1$$ |  | $$2^{0 }=1$$ |
| $$a^{-n}= \frac{1}{a^{n}}$$ |  | $$2^{-6}= \frac{1}{2^{6}}= \frac{1}{64}$$ |
| $$\frac{1}{a^{-n}}= a^{n}$$ |  | $$\frac{1}{2^{-6}}= 2^{6 }=64$$ |
| $$\left(\frac{a}{b}\right)^{-n }= \left(\frac{b}{a}\right)^{n}$$ | $$\left(\frac{a}{b}\right)^{-6 }= \left(\frac{b}{a}\right)^{6}=\frac{b^{6}}{a^{6}}$$ | $$\left(\frac{a}{2}\right)^{-6 }= \left(\frac{2}{a}\right)^{6}=\frac{64}{a^{6}}$$ |

Oefeningen ( zie werkboek pag 86 en pag 108 )

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| $$x^{2}x^{3}$$ |  | $$2^{4}b^{3}b^{-2}$$ |  |
| $$\frac{3y^{5}}{y^{2}}$$ |  | $$\left(2x^{3}\right)^{3}$$ |  |
| $$\left(-4x²y\right)^{0}$$ |  | $$\frac{a^{2}}{a^{-5}}$$ |  |
| $$\left(2b^{-3}\right)^{-2}$$ |  | $$\left(-5x^{-3}\right)^{2}$$ |  |
| $$\left(-2\right)^{4}\left(-2\right)^{-3}$$ |  | $$\frac{2^{4}+ 2^{-3}}{2^{-1}}$$ |  |
| $$\frac{-2^{4}}{\left(-2\right)^{-3}}$$ |  | $$4^{-2}4^{2}$$ |  |
| $$a^{-2}a^{3}$$ |  | $$\frac{b^{-3}}{b^{-2}}$$ |  |
| $$\frac{-5a^{0}}{b^{-3}}$$ |  | $$\frac{2x^{7}}{\left(-3x\right)^{-3}}$$ |  |
| $$\left(-y^{-2}\right)^{-4}$$ |  | $$\frac{1}{\left(2k\right)^{-3}}$$ |  |
| $$\frac{\left(2y\right)^{3}}{2y^{-3}}$$ |  | $$\frac{4^{-2}p^{2}}{p^{-5}}$$ |  |

Vierkantswortels ( pag 87-97)

|  |  |  |
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| $$\sqrt{a^{2 }=a }$$ | $$\sqrt{7^{2}}=7$$ | $$\sqrt{\left(-7\right)^{2}=7}$$ |
| $$\sqrt{-a^{2 } } bestaat niet$$ | $$\sqrt{-7^{2} }bestaat niet$$ |  |
| $\sqrt{a^{3} }$ **=** $a\sqrt{a}$ | $$\sqrt{7^{3} }=7\sqrt{7}$$ | $$\sqrt{8}=\sqrt{2^{3} }=2\sqrt{2}$$ |
| $$\sqrt{a^{4} }= a^{2}$$ | $$\sqrt{7^{4} }= 7^{2}=49 $$ |  |
| $$\sqrt{a}+ \sqrt{b} is NIET \sqrt{a+b}$$ | $$\sqrt{9}+ \sqrt{16} is niet \sqrt{9+16}$$ | 3 + 4 is niet 5 |
| $\sqrt{ab}$ **=** $\sqrt{a}\sqrt{b}$ | $\sqrt{9.16 }=\sqrt{9}\sqrt{16}$ = 3.4 = 12 | $$\sqrt{9a=} \sqrt{9}\sqrt{a}=3\sqrt{a}$$ |
| $$x\sqrt{a }+y\sqrt{a }=(x+y)\sqrt{a}$$ | $$3\sqrt{a}+5\sqrt{a}=8\sqrt{a}$$ | $\sqrt{2}a$ + $\sqrt{2.}b= \sqrt{2} (a+b)$ |
| $\left(\sqrt{a}\right)^{n}$ **=** $\sqrt{a^{n}}$ | $\sqrt{3}^{3}$ = $\sqrt{3^{3}}$ = 3$\sqrt{3}$ |  |
| $$\frac{\sqrt{a}}{\sqrt{b}}= \sqrt{\frac{a}{b}}$$ | $$\sqrt{\frac{16}{9} }= \frac{\sqrt{16}}{\sqrt{9}} = \frac{4}{3}$$ |  |
| $$\frac{a}{\sqrt{b}}= \frac{a\sqrt{b}}{b}$$ | $$\frac{a}{\sqrt{6} }=\frac{a\sqrt{6}}{6}$$ | $$\frac{1}{\sqrt{2}}= \frac{\sqrt{2}}{2}$$ |

Oefeningen pag 94 , 98 , 110-112

Vereenvoudig

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| $\sqrt{4} =$ 2 | $\sqrt{8} =$ 2$\sqrt{2}$ | $\sqrt{9} =$ 3 | $\sqrt{12} =$ 2$\sqrt{3}$ |
| $\sqrt{16} =$ 4 | $\sqrt{18} =$ 3$\sqrt{2}$ | $\sqrt{20} =$ 2$\sqrt{5}$ | $\sqrt{24} =$ 2$\sqrt{6}$ |
| $\sqrt{25} =$ 5 | $\sqrt{27} =$ 3$\sqrt{3}$ | $\sqrt{28}=$ 2$\sqrt{7}$ | $\sqrt{32} =$ 4$\sqrt{2}$ |
| $\sqrt{36} =$ 6 | $\sqrt{40} =$2$\sqrt{10}$ | $\sqrt{45} =$ 3$\sqrt{5}$ | $\sqrt{48} =$ 4$\sqrt{3}$ |
| $\sqrt{49} =$ 7 | $\sqrt{50} =$ 5$\sqrt{2}$ | $\sqrt{52} =$ 2$\sqrt{13}$ | $\sqrt{54} =$ 3$\sqrt{6}$ |
| $\sqrt{56} =$ 2$\sqrt{14}$ | $\sqrt{60} =$ 2$\sqrt{15}$ | $\sqrt{63} =$ 3$\sqrt{7}$ | $\sqrt{64} =$ 8 |
| $\sqrt{68} =$ 2$\sqrt{17}$ | $\sqrt{72} =$ 6$\sqrt{2}$ | $\sqrt{75} =$ 5$\sqrt{3}$ | $\sqrt{76} =$ 2$\sqrt{19}$ |
| $\sqrt{80} = $ 4$\sqrt{5}$ | $\sqrt{81} =$ 9 | $\sqrt{84} =$ 2$\sqrt{2}1$ | $\sqrt{88} =$ 2$\sqrt{22}$ |
| $\sqrt{90} =$ 3$\sqrt{10}$ | $\sqrt{92} =$ 2$\sqrt{23}$ | $\sqrt{96} =$ 4$\sqrt{6}$ | $\sqrt{99} =$ 3$\sqrt{11}$ |

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| $$\sqrt{121.16.49}$$ | 308 | $$\sqrt{\frac{10000}{16}}$$ | 25 |
| $$\sqrt{4^{8}}$$ | 256 | $$\sqrt{a^{24}}$$ | $$a^{12}$$ |
| $$\sqrt{s^{28}t^{30}}$$ | $$s^{14}t^{15}$$ | $$\sqrt{a^{25}b^{15}}$$ | $$a^{12}b^{7}\sqrt{a^{}b^{}}$$ |
| $$\sqrt{3}+3\sqrt{3}-4\sqrt{3}$$ | 0 | $$2\sqrt{a}+3\sqrt{a}-4\sqrt{a}$$ | $$\sqrt{a}$$ |
| $$\sqrt{2}+ \sqrt{8}$$ | 3$\sqrt{2}$ | $$\sqrt{18}+ \sqrt{32}$$ | 76$\sqrt{2}$ |
| $$\sqrt{48}-\sqrt{75}$$ | -$\sqrt{3}$ | $$\sqrt{108}- \sqrt{63}$$ | 6$\sqrt{3}$ - 3$\sqrt{7}$ |
| $$\sqrt{2}\sqrt{8}$$ | 4 | $$\sqrt{75}\sqrt{3}$$ | 15 |
| $$\sqrt{6+ \frac{1}{4}}$$ | 5/2 | $$\sqrt{\frac{25}{4}}$$ | 5/2 |
| $$\sqrt{50}+\sqrt{2}$$ | 6$\sqrt{2}$ | $$\sqrt{20}+ \sqrt{80}$$ | 6$\sqrt{5}$ |
| $$\sqrt{147}- \sqrt{27}- \sqrt{75}$$ | 5$\sqrt{3}$ | $$\frac{10}{\sqrt{50}}$$ | $$\sqrt{2}$$ |
| $$\frac{\sqrt{2}}{\sqrt{3}}$$ | 2$\sqrt{2}/3$ | $$\frac{4+ \sqrt{2}}{\sqrt{2}}$$ | 2$\sqrt{2} +1$ |