1.3 MURTOPOTENSSI

5.20 ORANSSI MAOL
5.16 HARMAA MAOL

Määritelmä

$$a^{\frac{1}{n}} = \sqrt[n]{a^1} = \sqrt[n]{a}, \quad a > 0, \; n = 2, 3, 4, \ldots$$

E1 $a^{\frac{1}{2}} = \sqrt{a}$

$$a^{\frac{m}{n}} = \sqrt[n]{a^m} = \left(\sqrt[n]{a}\right)^m, \quad a > 0, \; n = 2, 3, 4, \ldots$$

E2 a) $4^{\frac{2}{3}} = \sqrt[3]{4^2} = \sqrt[3]{16}$

b) $\sqrt[4]{32} = 32^{\frac{1}{4}} = \sqrt[4]{2 \cdot 16} = \sqrt[4]{2} \cdot \sqrt[4]{16} = \sqrt[4]{2} \cdot \sqrt[4]{2^4} = 2\sqrt[4]{2}$

SÄÄNNÖT

$\sqrt[n]{a \cdot b} = \sqrt[n]{a} \cdot \sqrt[n]{b}$!

$\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}$

$a > 0$ ja $b \neq 0$, $n = 2, 3, \ldots$

E3 $x > 0$

a) $x^{\frac{1}{2}} = \sqrt{x}$

b) $x^{\frac{5}{4}} = \sqrt[4]{x^5} = \sqrt[4]{x^4 \cdot x} = \sqrt[4]{x^4} \cdot \sqrt[4]{x} = x\sqrt[4]{x}$