$$\left(\sqrt[3]{\frac{x}{9}}\right)^2 : \left(\sqrt[6]{x}\right)^3 =$$

$$= \sqrt[3]{\frac{x^2}{81}} : \sqrt[6]{x^3} =$$

$$= \sqrt[6]{\frac{x^4}{3^8} \cdot \frac{1}{x^3}} = \sqrt[6]{\frac{x}{3^8}} =$$

$$= \frac{1}{3}\sqrt[6]{\frac{x}{9}}$$

Razionalizzazione

$$\frac{1}{\sqrt{2}}\,\frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

fattore razionalizzante

$$\frac{2x}{\sqrt{x}} \cdot \frac{\sqrt{x}}{\sqrt{x}} = \frac{2x\sqrt{x}}{x} = 2\sqrt{x}$$

$$\frac{1}{2\sqrt{a}} \cdot \frac{\sqrt{a}}{\sqrt{a}} = \frac{\sqrt{a}}{2a}$$

$$\frac{1}{\sqrt[5]{a^2}} \cdot \frac{\sqrt[5]{a^3}}{\sqrt[5]{a^3}} = \frac{\sqrt[5]{a^3}}{a}$$

$$\frac{1}{\sqrt[3]{a^7}} = \frac{1}{a^2\sqrt[3]{a}} \cdot \frac{\sqrt[3]{a^2}}{\sqrt[3]{a^2}} = \frac{\sqrt[3]{a^2}}{a^3}$$

$$\frac{1}{\sqrt{x} - \sqrt{y}} \cdot \frac{\sqrt{x}+\sqrt{y}}{\sqrt{x}+\sqrt{y}} = \frac{\sqrt{x}+\sqrt{y}}{x-y}$$

$$-3\sqrt{2}\,x + \frac{1-2x}{1-\sqrt{2}} = x + \sqrt{2}$$

$$-3\sqrt{2}\,x + \left[\frac{1-2x}{1-\sqrt{2}} \cdot \frac{1+\sqrt{2}}{1+\sqrt{2}}\right] = x + \sqrt{2}$$

$$-3\sqrt{2}\,x + \frac{1+\sqrt{2}-2x-2\sqrt{2}x}{1-2} = x + \sqrt{2}$$

$$-3\sqrt{2}\,x - 1 - \sqrt{2} + 2x + 2\sqrt{2}x = x + \sqrt{2}$$

$$-3\sqrt{2}x + 2x + 2\sqrt{2}x - x = 1 + \sqrt{2} + \sqrt{2}$$

$$x - \sqrt{2}x = 1 + 2\sqrt{2}$$

$$x(1-\sqrt{2}) = 1 + 2\sqrt{2}$$

$$x = \frac{1+2\sqrt{2}}{1-\sqrt{2}} \cdot \frac{1+\sqrt{2}}{1+\sqrt{2}} =$$

$$= \frac{1+\sqrt{2}+2\sqrt{2}+4}{1-2} = -(5+3\sqrt{2})$$