

S 76 Nr 3

$$a) \sqrt{x} = 11 \Rightarrow x^{\frac{1}{2}} = 11 \mid \uparrow^2 \Rightarrow (x^{\frac{1}{2}})^2 = 11^2 \Rightarrow \underline{\underline{x = 121}}$$

$$b) \sqrt[3]{x} = 8 \Rightarrow x^{\frac{1}{3}} = 8 \mid \uparrow^3 \Rightarrow (x^{\frac{1}{3}})^3 = 8^3 \Rightarrow \underline{\underline{x = 512}}$$

$$c) x^{\frac{1}{2}} = 7 \Rightarrow x = 7^2 \Rightarrow \underline{\underline{x = 49}}$$

$$d) x^{\frac{1}{5}} = 1 \Rightarrow x = 1^5 \Rightarrow \underline{\underline{x = 1}}$$

$$e) \sqrt[3]{2x} = 1 \mid \uparrow^3 \Rightarrow 2x = 1^3 \mid :2 \Rightarrow \underline{\underline{x = \frac{1}{2}}}$$

$$f) \sqrt[3]{x-1} = 2 \mid \uparrow^3 \Rightarrow x-1 = 2^3 \Rightarrow x = 2^3 + 1 \Rightarrow \underline{\underline{x = 9}}$$

$$g) \sqrt{x^3} = 2 \Rightarrow x^{\frac{3}{2}} = 2 \mid \uparrow^{\frac{2}{3}} \Rightarrow (x^{\frac{3}{2}})^{\frac{2}{3}} = 2^{\frac{2}{3}} \Rightarrow \underline{\underline{x = \sqrt[3]{2^2} \approx 1,587}}$$

$$h) \sqrt[3]{x^2} = 2 \Rightarrow x^{\frac{2}{3}} = 2 \mid \uparrow^{\frac{3}{2}} \Rightarrow (x^{\frac{2}{3}})^{\frac{3}{2}} = 2^{\frac{3}{2}} \Rightarrow \underline{\underline{x = \sqrt[2]{2^3} = \sqrt{8} \approx 2,828}}$$

$$i) \sqrt[6]{x^5} = 10^{-5} \Rightarrow x^{\frac{5}{6}} = 10^{-5} \mid \uparrow^{\frac{6}{5}} \Rightarrow (x^{\frac{5}{6}})^{\frac{6}{5}} = (10^{-5})^{\frac{6}{5}} \Rightarrow \underline{\underline{x = 10^{-\frac{5 \cdot 6}{5}} = 10^{-6}}}$$

$$j) x^{\frac{2}{3}} = 3 \mid \uparrow^{\frac{3}{2}} \Rightarrow \underline{\underline{x = \sqrt[2]{3^3} = \sqrt{27} = 3\sqrt{3} \approx 5,196}}$$

$$k) x^{\frac{5}{2}} = 1 \mid \uparrow^{\frac{2}{5}} \Rightarrow \underline{\underline{x = 1^{\frac{2}{5}} = 1}}$$

$$l) x^{\frac{3}{4}} = 0,001 = \frac{1}{1000} \mid \uparrow^{\frac{4}{3}}$$

$$\underline{\underline{(x^{\frac{3}{4}})^{\frac{4}{3}} = x = \left(\frac{1}{1000}\right)^{\frac{4}{3}} = \left(\frac{1}{10^3}\right)^{\frac{4}{3}} = (10^{-3})^{\frac{4}{3}} = 10^{-\frac{3 \cdot 4}{3}} = 10^{-4}}}$$