

Exples

$$a) \quad \sqrt[3]{2} \sqrt[3]{2^2} = \sqrt[3]{2 \cdot 2^2} = \sqrt[3]{2^3} = 2$$

$$\underline{\text{ou}} \quad = 2^{\frac{1}{3}} \cdot 2^{\frac{2}{3}} = 2^{\frac{1}{3} + \frac{2}{3}} = 2^{\frac{3}{3}} = 2$$

$$b) \quad \frac{\sqrt{a^3}}{\sqrt{a^5}} = \sqrt{\frac{a^3}{a^5}} = \sqrt{\frac{1}{a^2}} = \frac{\sqrt{1}}{\sqrt{a^2}} = \frac{1}{a}$$

$$\underline{\text{ou}} \quad = \frac{a^{3/2}}{a^{5/2}} = a^{\frac{3}{2} - \frac{5}{2}} = a^{-\frac{2}{2}} = a^{-1} = \frac{1}{a}$$

$$c) \quad \sqrt[3]{\sqrt{a^3}} = \sqrt[6]{a^3} = \sqrt{a}$$

$$\underline{\text{ou}} \quad (a^{3/2})^{1/3} = a^{\frac{3}{2} \cdot \frac{1}{3}} = a^{\frac{1}{2}} = \sqrt{a}$$

$$d) \sqrt[3]{a^2} \cdot \sqrt[5]{a^3} = \begin{array}{l} \sqrt[15]{a^{10}} \cdot \sqrt[15]{a^9} = \sqrt[15]{a^{19}} = a \sqrt[15]{a^4} \\ a^{\frac{2}{3}} \cdot a^{\frac{3}{5}} = a^{\frac{2}{3} + \frac{3}{5}} = a^{\frac{10+9}{15}} \\ = a^{\frac{19}{15}} = \sqrt[15]{a^{19}} = \dots \end{array}$$

~~ex 1.1.11~~

$$a) \sqrt[5]{a^3} \cdot (\sqrt[5]{a})^2 = \sqrt[5]{a^3} \sqrt[5]{a^2} = \sqrt[5]{a^3 \cdot a^2} = \sqrt[5]{a^5} = a$$

$$b) \sqrt[3]{a} (\sqrt[3]{a})^2 = a^{\frac{1}{3}} \cdot a^{\frac{2}{3}} = a^{\frac{3}{3}} = a$$

$$c) \sqrt[5]{a^3} (\sqrt[5]{a^2})^6 = \sqrt[5]{a^3} \sqrt[5]{a^{12}} = \sqrt[5]{a^{15}} = a^3$$

$$d) \sqrt[4]{a^3} \sqrt[3]{a^4} = a^{\frac{3}{4} + \frac{4}{3}} = a^{\frac{9+16}{12}} = a^{\frac{25}{12}} = \sqrt[12]{a^{25}} = a^2 \sqrt[12]{a}$$

ou $\sqrt[12]{a^9} \sqrt[12]{a^{16}} = \sqrt[12]{a^{25}}$

$$e) \sqrt{a} \sqrt[5]{a^3} (\sqrt[10]{a})^4 = a^{\frac{1}{2}} \cdot a^{\frac{3}{5}} \cdot a^{\frac{4^2}{10 \cdot 5}} = a^{\frac{1}{2} + \frac{3}{5} + \frac{2}{5}} = a^{\frac{3}{2}} = \sqrt{a^3} = a\sqrt{a}$$