

2.14

- 1) $\frac{\sqrt[3]{a^4}}{\sqrt{a}} = \frac{a^{\frac{4}{3}}}{a^{\frac{1}{2}}} = a^{\frac{4}{3}-\frac{1}{2}} = a^{\frac{5}{6}} = \sqrt[6]{a^5}$
- 2) $\frac{\sqrt[6]{a^5}}{\sqrt[4]{a^3}} = \frac{a^{\frac{5}{6}}}{a^{\frac{3}{4}}} = a^{\frac{5}{6}-\frac{3}{4}} = a^{\frac{1}{12}} = \sqrt[12]{a}$
- 3) $\frac{\sqrt{a^3}}{\sqrt[5]{a^3}} = \frac{a^{\frac{3}{2}}}{a^{\frac{3}{5}}} = a^{\frac{3}{2}-\frac{3}{5}} = a^{\frac{9}{10}} = \sqrt[10]{a^9}$
- 4) $\frac{\sqrt[6]{a^5}}{\sqrt{a} \sqrt[3]{a}} = \frac{a^{\frac{5}{6}}}{a^{\frac{1}{2}} \cdot a^{\frac{1}{3}}} = a^{\frac{5}{6}-\frac{1}{2}-\frac{1}{3}} = a^0 = 1$
- 5) $\frac{\sqrt{a} \sqrt[3]{a}}{\sqrt[4]{a}} = \frac{a^{\frac{1}{2}} \cdot a^{\frac{1}{3}}}{a^{\frac{1}{4}}} = a^{\frac{1}{2}+\frac{1}{3}-\frac{1}{4}} = a^{\frac{7}{12}} = \sqrt[12]{a^7}$
- 6) $\frac{a}{\sqrt[3]{a^2} \sqrt[4]{a}} = \frac{a}{a^{\frac{2}{3}} \cdot a^{\frac{1}{4}}} = a^{1-\frac{2}{3}-\frac{1}{4}} = a^{\frac{1}{12}} = \sqrt[12]{a}$
- 7) $\frac{\sqrt[3]{a^5} \sqrt[6]{a}}{a^3} = \frac{a^{\frac{5}{3}} \cdot a^{\frac{1}{6}}}{a^3} = a^{\frac{5}{3}+\frac{1}{6}-3} = a^{-\frac{7}{6}} = \frac{1}{a^{\frac{7}{6}}} = \frac{1}{\sqrt[6]{a^7}} = \frac{1}{\sqrt[6]{a^6 \cdot a}} = \frac{1}{a \sqrt[6]{a}}$
- 8) $\frac{(\sqrt{a})^3}{a \sqrt[3]{a^2}} = \frac{(a^{\frac{1}{2}})^3}{a \cdot a^{\frac{2}{3}}} = \frac{a^{3 \cdot \frac{1}{2}}}{a^{1+\frac{2}{3}}} = \frac{a^{\frac{3}{2}}}{a^{\frac{5}{3}}} = a^{\frac{3}{2}-\frac{5}{3}} = a^{-\frac{1}{6}} = \frac{1}{a^{\frac{1}{6}}} = \frac{1}{\sqrt[6]{a}}$