Simplify

$\sqrt[3]{y^4} = \sqrt[3]{y^3} \cdot \sqrt[3]{y}$

$-\sqrt{64x^{12}y^{15}}$

$\sqrt{y^{14}} \cdot \sqrt{y}$

$-\sqrt{64} \cdot \sqrt{x^{12}} \cdot \sqrt{y^{15}}$

$-8x^6y^7\sqrt{y}$

$7x^{1/3}y^{4/3}$

$7\sqrt[3]{xy^4}$

$7y\sqrt[3]{xy}$

$\sqrt[3]{128x^3}$

$\sqrt[3]{128} = \sqrt[3]{64} \cdot \sqrt[3]{2}$

$4\sqrt[3]{2}$

$4x\sqrt[3]{2}$

$(2xy^2)^{1/2}$

$2^{1/2}\ x^{1/2}\ (y^2)^{1/2}$

$\sqrt{2x} \cdot y$

$y\sqrt{2x}$

Simplify

$\sqrt[3]{8a^7b^5}$

$\sqrt[3]{a^6} \cdot \sqrt[3]{a}$

$\sqrt[3]{b^3} \cdot \sqrt[3]{b^2}$

$2a^2b\sqrt[3]{ab^2}$

$\sqrt[3]{\frac{64}{8}} = \sqrt[3]{8} = 2$

$\frac{4}{2} = 2$

$\sqrt[5]{x^{30}}$ $\quad (x^{30})^{1/5} = x^6$

$\sqrt[5]{\frac{2x^{10}y^4}{x^{15}}} = \sqrt[5]{\frac{2y^4}{x^5}}$

$= \frac{\sqrt[5]{2y^4}}{\sqrt[5]{x^5}}$

$= \frac{\sqrt[5]{2y^4}}{x}$

Simplify

$\frac{4}{1} \cdot \frac{3}{2} = \frac{12}{2}$

$(n^4)^{\frac{3}{2}}$ n^6

$(27p^6)^{\frac{5}{3}}$

$(27)^{5/3} \cdot (p^6)^{5/3}$

$243p^{10}$

$(64m^4)^{\frac{3}{2}}$

$(64)^{3/2} \cdot (m^4)^{3/2}$

$512m^6$

$(216r^9)^{\frac{1}{3}}$

$(216)^{1/3} \cdot (r^9)^{1/3}$

$6r^3$

$2m^2 \cdot 4m^{\frac{3}{2}} \cdot 4m^{-2}$ $\quad 2 + \frac{3}{2} - 2$

$32\,m^{3/2}$

$3b^{\frac{1}{2}} \cdot b^{\frac{4}{3}}$ $\quad \frac{1}{2} + \frac{4}{3}$ $\quad \frac{3}{6} + \frac{8}{6} = \frac{11}{6}$

$3b^{11/6}$

$\left(p^{\frac{3}{2}}\right)^{-2} = \frac{1}{\left(p^{3/2}\right)^2}$

$= \frac{1}{p^3}$

$\left(a^{\frac{1}{2}}\right)^{\frac{3}{2}}$ $\quad \frac{1}{2} \cdot \frac{3}{2} = \frac{3}{4}$

$a^{3/4}$

$$\frac{2x^{-\frac{7}{4}}}{4x^{\frac{4}{3}}} = \frac{1}{2x^{\frac{37}{12}}}$$

$-\frac{7}{4} - \frac{4}{3}$

$-\frac{21}{12} - \frac{16}{12} = -\frac{37}{12}$

$$\frac{4x^2}{2x^{\frac{1}{2}}} = 2x^{3/2}$$

$2 - \frac{1}{2}$

$\frac{4}{2} - \frac{1}{2} = \frac{3}{2}$

$$\frac{3x^{-\frac{1}{2}} \cdot 3x^{\frac{1}{2}} y^{-\frac{1}{3}}}{3y^{-\frac{7}{4}}} = \frac{9y^{-1/3}}{3y^{-7/4}} = 3y^{\frac{17}{12}}$$

$$-\tfrac{1}{3} - \left(-\tfrac{7}{4}\right)$$

$$-\tfrac{4}{12} - \left(-\tfrac{21}{12}\right)$$

$$-\tfrac{4}{12} + \tfrac{21}{12}$$

$$\frac{3y^{\frac{1}{4}}}{4x^{-\frac{2}{3}} y^{\frac{3}{2}} \cdot 3y^{\frac{1}{2}}}$$

$$\frac{3y^{1/4}}{12x^{-\frac{2}{3}} y^{2}}$$

$$\frac{1x^{2/3}}{4y^{7/4}}$$

$$\tfrac{1}{4} - 2$$

$$\tfrac{1}{4} - \tfrac{8}{4}$$

$$\left(\frac{x^{\frac{1}{2}}y^{-2}}{yx^{-\frac{7}{4}}}\right)^4 = \frac{x^2y^{-8}}{x^{-7}y^4}$$

$$\frac{x^9}{y^{12}}$$

$\frac{3}{2}\cdot\frac{2}{1}=\frac{6}{2}=3$

$$\frac{\left(x^3y^2\right)^{\frac{3}{2}}}{\left(x^{-1}y^{-\frac{2}{3}}\right)^{\frac{1}{4}}} = \frac{x^{\frac{9}{2}}y^3}{x^{-\frac{1}{4}}y^{-\frac{1}{6}}}$$

$$x^{\frac{19}{4}}y^{\frac{19}{6}}$$

$\frac{9}{2}-\left(-\frac{1}{4}\right)$ | $3-\left(-\frac{1}{6}\right)$

$\frac{18}{4}-\left(-\frac{1}{4}\right)$ | $\frac{18}{6}-\left(-\frac{1}{6}\right)$

$\frac{19}{4}$ | $\frac{19}{6}$