

Simplify

$$\begin{aligned}\sqrt{\frac{45}{80}} &= \sqrt{\frac{9}{16}} \\ &= \frac{\sqrt{9}}{\sqrt{16}} = \frac{3}{4}\end{aligned}$$

$$\begin{aligned}\sqrt{\frac{75}{48}} &= \sqrt{\frac{25}{16}} \\ &= \frac{\sqrt{25}}{\sqrt{16}} = \frac{5}{4}\end{aligned}$$

$$\begin{aligned}\sqrt{\frac{98}{162}} &= \sqrt{\frac{49}{81}} \\ &= \frac{7}{9}\end{aligned}$$

$$\sqrt[3]{\frac{16}{54}} = \sqrt[3]{\frac{8}{27}} = \frac{2}{3}$$

$$\begin{aligned}\sqrt[3]{\frac{32}{162}} &= \sqrt[3]{\frac{16}{81}} = \frac{\sqrt[3]{16}}{\sqrt[3]{81}} \\ &= \frac{\sqrt[3]{8 \cdot 2}}{\sqrt[3]{27 \cdot 3}} \\ &= \frac{2\sqrt[3]{2}}{3\sqrt[3]{3}}\end{aligned}$$

Simplify

$$\sqrt{\frac{m^6}{m^4}} \quad \frac{\cancel{m} \cancel{m} \cancel{m} \cancel{m} m m}{\cancel{m} \cancel{m} \cancel{m} \cancel{m}}$$

$$\sqrt{m^2} = m$$

$$\sqrt{\frac{x^{14}}{x^{10}}} = \sqrt{x^4} \\ = x^2$$

Simplify

$$\sqrt[3]{\frac{a^8}{a^5}} = \sqrt[3]{a^3}$$
$$= a$$

$$\sqrt[4]{\frac{y^{17}}{y^5}}$$

$$\sqrt[4]{y^{12}} = (y^{12})^{\frac{1}{4}}$$
$$= y^3$$

Simplify

$$\begin{aligned}\sqrt{\frac{27m^3}{196}} &= \sqrt{\frac{27}{196}} \cdot \sqrt{m^3} \\ &= \frac{\sqrt{9 \cdot 3}}{\sqrt{146}} \cdot \sqrt{m^2 \cdot m} \\ &= \frac{3\sqrt{3}}{14} \cdot m\sqrt{m} \\ &= \frac{3m\sqrt{3m}}{14}\end{aligned}$$

$$\begin{aligned}\sqrt{\frac{45x^3}{y^4}} &= \frac{\sqrt{45} \cdot \sqrt{x^3}}{\sqrt{y^4}} \\ &= \frac{\sqrt{9} \cdot \sqrt{5} \cdot \sqrt{x^2} \cdot \sqrt{x}}{3\sqrt{5} \cdot x\sqrt{x}} \\ &= \frac{3x\sqrt{5x}}{y^2}\end{aligned}$$

Simplify

$$\begin{aligned} & \sqrt[3]{\frac{24x^7}{y^3}} \\ & \frac{\sqrt[3]{8} \cdot \sqrt[3]{3} \cdot \sqrt[3]{x^6} \cdot \sqrt[3]{x}}{\sqrt[3]{y^3}} \\ & \frac{2\sqrt[3]{3} \cdot x^2 \cdot \sqrt[3]{x}}{y} \\ & \frac{2x^2\sqrt[3]{3x}}{y} \end{aligned}$$

$$\begin{aligned} & \sqrt[4]{\frac{48x^{10}}{y^8}} = \frac{\sqrt[4]{16} \cdot \sqrt[4]{3} \cdot \sqrt[4]{x^8} \cdot \sqrt[4]{x^2}}{\sqrt[4]{y^8}} \\ & = \frac{2\sqrt[4]{3} \cdot x^2\sqrt[4]{x^2}}{y^2} \\ & \frac{2x^2\sqrt[4]{3x^2}}{y^2} \end{aligned}$$

Simplify

$$\sqrt{\frac{50x^5y^3}{72x^4y}} = \sqrt{\frac{25xy^2}{36}}$$

$$\frac{5y\sqrt{x}}{6}$$

$$\frac{\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot x}{\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x}}$$

Simplify

$$\sqrt[3]{\frac{16x^5y^2}{54x^2y^5}}$$

$$\sqrt[3]{\frac{8x^3}{27y^3}}$$

$$\frac{2x}{3y}$$

$$\frac{\sqrt{48a^7}}{\sqrt{3a}} \quad \sqrt{\frac{48a^7}{3a}}$$

$$\sqrt{16a^6}$$

$$4a^3$$

~~8~~⁷-107
odd

$$\frac{\sqrt[3]{-108x^6}}{\sqrt[3]{2x^3}} = \sqrt[3]{\frac{-108x^6}{2x^3}}$$
$$= \sqrt[3]{-54x^3}$$

$$\sqrt[3]{-27} \cdot \sqrt[3]{2} \cdot \sqrt[3]{x^3}$$
$$-3x\sqrt[3]{2}$$