

Simplify each. Assume that all variables are positive.

$$1. \quad \sqrt[7]{42m^3x} \cdot \sqrt[7]{56m^5x^8}$$

$$\sqrt[7]{7 \cdot 6 m^3 x} \cdot \sqrt[7]{7 \cdot 8 m^5 x^8}$$

$$\sqrt[7]{7^2 \cdot 48 m^8 x^9}$$

$$7 \cdot 4 m^4 x^4 \sqrt[7]{3x} = \boxed{28 m^4 x^4 \sqrt[7]{3x}}$$

Simplify each. Assume that all variables are positive.

$$2. \quad \sqrt[3]{2m^5n} \cdot \sqrt[3]{4m^8n^3} \cdot \sqrt[3]{3mn^7}$$

$$\sqrt[3]{8 \cdot 3 m^{14} n^{11}}$$

$$= \boxed{2m^4n^3 \sqrt[3]{3m^2n^2}}$$

Simplify each. Assume that all variables are positive.

$$\frac{\sqrt{24x^5y^{13}}}{\sqrt{3xy^4}}$$

If $\sqrt[n]{a}$ and $\sqrt[n]{b}$ are real #'s and $b \neq 0$,
then $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$

$$\sqrt{\frac{24x^5y^{13}}{3xy^4}} = \sqrt{8x^4y^9} = \boxed{2x^2y^4\sqrt{2y}}$$

Simplify each. Assume that all variables are positive.
Rationalize denominators as necessary.

$$\frac{\sqrt{48x^9y^8}}{\sqrt{2x^6y^3}} = \sqrt{\frac{48x^9y^8}{2x^6y^3}} = \sqrt{\frac{24x^3y^5}{1}}$$

$$= \boxed{2xy^2\sqrt{6xy}}$$

Simplify each. Assume that all variables are positive.
Rationalize denominators as necessary.

$$\frac{\sqrt[3]{5a^7b^2}}{\sqrt[3]{15ab^{10}}} = \frac{\sqrt[3]{a^6} \cdot \sqrt[3]{3^2b}}{\sqrt[3]{3^1b^8} \cdot \sqrt[3]{3^2b^1}} = \frac{a^2 \sqrt[3]{9b}}{3b^3}$$

Handwritten notes: A green bracket above a^6 is labeled a^2 . A green bracket below 3^1b^8 is labeled $\sqrt[3]{3^1b^8}$. A green arrow points from $\sqrt[3]{3^1b^8}$ to the denominator of the final result.

Rimplify. Rationalize denominators. Assume variables are positive.

$$\frac{(5 + \sqrt{2} - \sqrt{3})}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{3} + \sqrt{6} - 3}{3}$$

The final result is enclosed in a green box.

You can now finish Hwk #18

Sec 7-2

Pages 377

Problems 19-21, 26, 38, 43, 51, 54, 66