Simplify each. Assume that all variables are positive.

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

7.6 7.8

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

16·3

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

Simplify each. Assume that all variables are positive.

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

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

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

Simplify each. Assume that all variables are positive.

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

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

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

4.2

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

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

4·6

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

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

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

$\sqrt[3]{3^2b^9}$

Rimplify. Rationalize denominators. Assume variables are positive.

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

You can now finish Hwk #18

Sec 7-2

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