

**Section 6-2
continued**

**Dividing Radical
Expressions**

Since multiplication is the inverse operation of division, you can apply the same rule to quotients as products.

$$\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$$

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Simplify:

$$\frac{\sqrt{18x^5}}{\sqrt{2x^3}} = \sqrt{\frac{18x^5}{2x^3}} = \sqrt{9x^2}$$

$3x$

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Simplify:

$$\frac{\sqrt[3]{162y^5}}{\sqrt[3]{3y^2}} = \sqrt[3]{\frac{162y^5}{3y^2}} = \sqrt[3]{54y^3}$$

$3y$

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You cannot leave a radical in the denominator of a fraction, so you must rationalize the denominator.

$$\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2}$$

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Simplify:

$$\frac{\sqrt[3]{7x}}{\sqrt[3]{5y^2}} = \frac{\sqrt[3]{7x} \sqrt[3]{25y}}{\sqrt[3]{5y^2} \sqrt[3]{25y}} = \frac{\sqrt[3]{175xy}}{\sqrt[3]{125y^3}} = \frac{\sqrt[3]{175xy}}{5y}$$

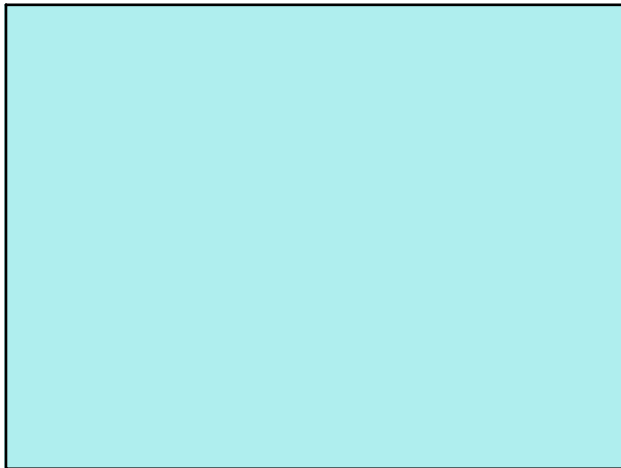
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$$\begin{aligned} \#50. \frac{\sqrt{5x^4y}}{\sqrt{2x^2y^3}} \cdot \frac{\sqrt{2x^2y^3}}{\sqrt{2x^2y^3}} &= \frac{\sqrt{10x^6y^4}}{\sqrt{4x^4y^6}} \\ &= \frac{x^3y^2\sqrt{10}}{2x^2y^3} = x \frac{\sqrt{10}}{2y} \end{aligned}$$

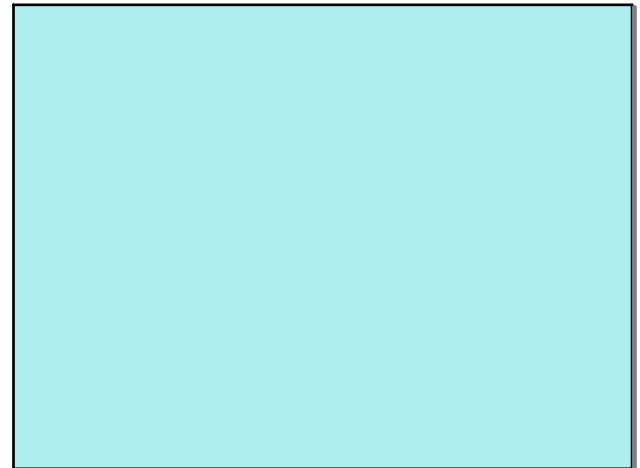
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Hwk: pg. 371 - 373
#38 - 54 evens, 64 - 68 evens

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