Simplify. Assume all variables are positive.

$$\sqrt{6ab^3} \cdot \sqrt{2a^6b^5}$$
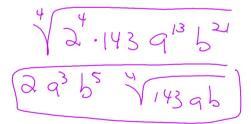
below are two methods to simplify this expression

$\sqrt{6ab^3} \cdot \sqrt{2a^6b^5}$	$\sqrt{6ab^3} \cdot \sqrt{2a^6b^5}$
	$2\cdot 3 \qquad 2$
$\sqrt{12a^7b^8}$	$\sqrt{2^2 \cdot 3\, a^7 b^8}$
$4\cdot 3$	
$2a^3b^4\sqrt{3a}$	$2a^3b^4\sqrt{3a}$

Simplify. Assume all variables are positive.

$$\sqrt[3]{15QR^7} \cdot \sqrt[3]{21Q^9R^5} \cdot \sqrt[3]{24Q^4R^{13}}$$

$$3\cdot 5 \qquad 3\cdot 7 \qquad 3\cdot 8$$

$$= \sqrt[3]{3^3 \cdot 8 \cdot 35\, Q^{14} R^{25}}$$

$$= 3\cdot 2\, Q^4 R^8 \sqrt[3]{35Q^2R}$$

$$= 6Q^4R^8 \sqrt[3]{35Q^2R}$$

You could also find the product of 15, 21, and 24 then find the largest 3rd power that is a factor of this product then find the roots.

Simplify. Assume all variables are positive.

$$\sqrt[4]{22a^3b^8} \cdot \sqrt[4]{4ab} \cdot \sqrt[4]{26a^9b^{12}}$$

$$2\cdot 11 \qquad 2\cdot 2 \qquad 2\cdot 13$$

$$\sqrt[4]{2^4 \cdot 143\, a^{13} b^{21}}$$

$$2a^3b^5 \sqrt[4]{143ab}$$

You could also find the product of 22, 4, and 26 then find the largest 4th power that is a factor of this product then find the roots.

Simplify. 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

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

$$\sqrt{8x^4y^9} = 2x^2y^4\sqrt{2y}$$

You can turn the ratio of two radicals, if they have the same index, into one radical, simplify the fraction, then find the roots.
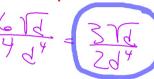
Panel 1 (top left)

Simplify. Assume that all variables are positive.

$$\sqrt{\dfrac{36d}{16d^8}}$$

this works in the other direction too.

if $\sqrt[n]{a}$ and $\sqrt[n]{b}$ are real #'s

and $b \neq 0$, then

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

$$\dfrac{\sqrt{36d}}{\sqrt{16d^8}} = \dfrac{6\sqrt{d}}{4d^4} = \boxed{\dfrac{3\sqrt{d}}{2d^4}}$$

You can separate the single radical into two separate radicals, one for the numerator and one for the denominator, do the roots, then simplify the fraction.

Panel 2 (top right)

Simplify. Assume that all variables are positive.

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

4·6

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

This is the answer if you reduce the fraction first then do the square root.

Panel 3 (bottom left)

Simplify. Assume that all variables are positive.

$$\dfrac{\sqrt[3]{5a^7b^2}}{\sqrt[3]{40a^2b^{11}}} = \sqrt[3]{\dfrac{a^5}{8b^9}} = \boxed{\dfrac{a\sqrt[3]{a^2}}{2b^3}}$$

This is the answer if you reduce the fraction first then do the cube root.

Panel 4 (bottom right)

You can now finish Hwk #4

Sec 7-2

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Problems 14-16, 19, 21, 25, 26, 44, 45

Due Monday