Simplify each. Assume that all variables are positive.

$\sqrt[3]{2m^5n} \cdot \sqrt[3]{4m^8n^3} \cdot \sqrt[3]{3mn^7} = \sqrt[3]{24\,m^{14}n^{11}}$

$2 \quad 2^2 \quad 3 \qquad 8 \cdot 3$

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

Simplify each. Assume that all variables are positive.

$\sqrt[5]{12c^4d} \cdot \sqrt[5]{14c^7d^3} \cdot \sqrt[5]{20c^2d^8} = \sqrt[5]{3360c^{13}d^{12}}$

$2^2 \cdot 3 \qquad 2 \cdot 7 \qquad 2^2 \cdot 5 \qquad 32 \cdot 105$

$2^5 \cdot 3 \cdot 7 \cdot 5 \qquad 2c^2d^2\sqrt[5]{105c^3d^2}$

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

$$\frac{\sqrt[3]{5a^7b^2}}{\sqrt[3]{15ab^{10}}}$$

Simplify each.

1. $\sqrt{5} \cdot \sqrt{5} = 5$

2. $3\sqrt{7} \cdot 4\sqrt{7}$

$12 \cdot 7 = 84$

Simplify. Rationalize denominators. Assume variables are positive.

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

Simplify each.

3. $\sqrt{11} \cdot 2\sqrt{3}$

$= 2\sqrt{33}$

4. $\sqrt{2}(7-\sqrt{8})$

$= 7\sqrt{2} - 4$

5. $2\sqrt{3}(7\sqrt{2}+5\sqrt{3}) = 14\sqrt{6} + 10 \cdot 3$

$= 14\sqrt{6} + 30$

You can now finish Hwk #9

Sec 7-2

Pages 377-378

Problems 19, 20, 24, 25, 28, 30, 33, 43, 46, 50, 53

Simplify.

Like-radicals: Have the same index and same radicand.

1. $5\sqrt{18} + 6\sqrt{12} - \sqrt{8} - 2\sqrt{27}$

$9 \cdot 2 \quad 4 \cdot 3 \quad 4 \cdot 2 \quad 9 \cdot 3$

$15\sqrt{2} + 12\sqrt{3} - 2\sqrt{2} - 6\sqrt{3}$

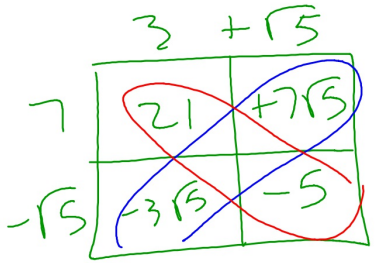
$13\sqrt{2} + 6\sqrt{3}$

Sec 7-3: Binomial Radical Expressions.

Expand each.

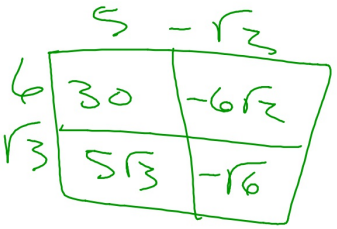
1. $(3+\sqrt{5})(7-\sqrt{5})$

$16-4\sqrt{5}$



Expand and simplify.

2. $(5-\sqrt{2})(6+\sqrt{3})$



$= 30-6\sqrt{2}+5\sqrt{3}-\sqrt{6}$