

pp. 8-9 Simplifying Radicals with Multiplication 6.2

Warm-up: Simplifying Radical Expressions

p.8

a.) $\sqrt{450}$

$15\sqrt{2}$

b.) $\sqrt{16x^2}$

$4x$

Warm-up: Simplifying Radical Expressions (continued)

groups of 3

groups of 4

p.8

c.) $\sqrt[3]{8x^3}$

$2x$

d.) $\sqrt[4]{x^8y^{12}}$

x^2y^3

Simplifying Radicals Using Product Rule

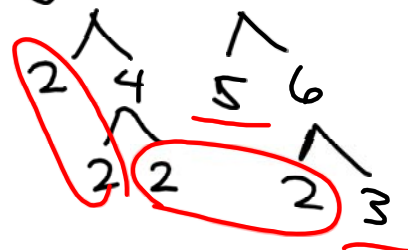
$$\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{a \cdot b}$$

p.9

$$1) -3\sqrt{8} \cdot \sqrt{30} = -3\sqrt{8 \cdot 30}$$

$$-3 \cdot 2 \cdot 2 \sqrt{5 \cdot 3}$$

$$-12\sqrt{15}$$



Simplifying Radicals Using Product Rule

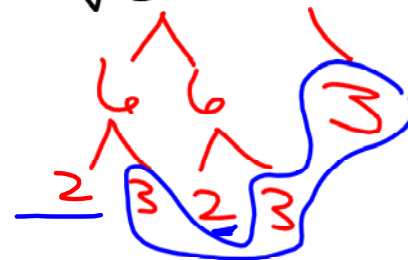
$$\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{a \cdot b}$$

p.9

$$2) \sqrt[3]{36} \cdot 12\sqrt[3]{3} = 12\sqrt[3]{36 \cdot 3}$$

$$12 \cdot 3 \sqrt[3]{2 \cdot 2}$$

$$36\sqrt[3]{4}$$



More Practice Multiplying Radicals

p.9

3) $2\sqrt{3x^2} \cdot 5\sqrt{8x^3} = 10\sqrt{3x^2 \cdot 8x^3}$

$10 \cdot 2 \cdot x \cdot x \sqrt{3 \cdot 2 \cdot x}$

$20x^2 \sqrt{6x}$

p.9

4) $\sqrt[3]{16x^4} \cdot \sqrt[3]{16x^4} = \sqrt[3]{16x^4 \cdot 16x^4}$

$2 \cdot 2 \cdot x \cdot x \sqrt[3]{2 \cdot 2 \cdot x \cdot x}$

$4x^2 \sqrt[3]{4x^2}$

$$5) \sqrt[4]{18m^3} \cdot \sqrt[4]{27m} = \sqrt[4]{18m^3 \cdot 27m}$$

$3m \sqrt[4]{6}$

Diagram showing prime factorization of 18 and 27:

 18: $3 \times 3 \times 2$ (circled 3s, 2 underlined)

 27: $3 \times 3 \times 3$ (circled 3s)

 The product $18m^3 \cdot 27m$ is shown as $m m m m$ (circled in red) with a 3 underlined.

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Homework - Worksheet #1-6

In class tomorrow #7-20