

September 14, 2015
 * Quiz #4 - Wednesday
 8.1, 8.2, 8.3

Sep 14-10:02 AM

8.2
 #69) $\sqrt[9]{x^{63}y^{12}z^{41}}$

$\sqrt[9]{(x^9)^7 \cdot (y^1)^7 \cdot y^5 \cdot (z^5)^7 \cdot z^6}$

$x^7 y z^5 \sqrt[7]{y^5 z^6}$

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8.2
 #53) $\sqrt[4]{48x^{13}y^{15}}$

$\sqrt[4]{16 \cdot 3 \cdot x^{12} \cdot y^{12} \cdot x \cdot y^3}$

$\sqrt[4]{(2^4)^4 \cdot 3 \cdot (x^3)^4 \cdot x \cdot (y^3)^4 \cdot y^3}$

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

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8.2
 #55) $\sqrt[3]{-100x^{10}y^{10}z^{20}}$

$\sqrt[3]{-100(x^3)^3 \cdot x \cdot (y^3)^3 \cdot y \cdot (z^5)^3 \cdot z^2}$

$x^3 y^3 z^5 \sqrt[3]{-100xy^2z^2}$

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$\sqrt[3]{-27} = \sqrt[3]{(-3)^3} = -3$

$(-3)^3 = (-3) \cdot (-3) \cdot (-3)$
 $= 9 \cdot (-3)$
 $= -27$

$\sqrt{-25} = \text{Not a Real Number}$

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8.3 Addition of Radicals

How do we add radicals?

Recall: $7x + 3x = 10x$

Distributing Property: $x(7+3) = x \cdot 10$

Key: we can add because we have "like" terms.

$7\sqrt{xy} + 3\sqrt{xy}$

like Radicals

$(7+3)\sqrt{xy} = 10\sqrt{xy}$

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8.3
Example 1.1

$\sqrt{18b} - \sqrt{75b}$

$18 = 2 \cdot 3^2$
 $75 = 3 \cdot 5^2$

not like radicands

$\sqrt{(3)^2 \cdot 2 \cdot b} - \sqrt{(5)^2 \cdot 3 \cdot b}$

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

not like

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Exp 1.c

$2\sqrt{32x^2y^3} - xy\sqrt{98y}$

$2\sqrt{(4)^2 \cdot 2 \cdot (x)^2 \cdot (y)^3 \cdot y} - xy\sqrt{(7)^2 \cdot 2y}$

$2 \cdot 4xy\sqrt{2y} - 7xy\sqrt{2y}$

$8xy\sqrt{2y} - 7xy\sqrt{2y}$

$xy\sqrt{2y}$

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What is a "like" Radical?

- Must have same Radicand
- Must have same Index

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8.3 Do #1 - #33 m3

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