

March 30, 2015
 * Exam #2 - Tuesday
 Cumulative!!

Mar 30-9:57 AM

addition of Radicals
 See 10.5 #10
 from 3/27

$$\frac{(3\sqrt{2} + \sqrt{6})}{(4\sqrt{2} - \sqrt{6})} \cdot \frac{(4\sqrt{2} + \sqrt{6})}{(4\sqrt{2} + \sqrt{6})}$$

$$\frac{12 \cdot 2 + 3\sqrt{12} + 4\sqrt{12} + 6}{16 \cdot 2 + 4\sqrt{12} - 4\sqrt{12} - 6}$$

F O I L

$$\frac{30 + 6\sqrt{3} + 8\sqrt{3}}{26}$$

addition of "like" radicals

$$\frac{30 + 14\sqrt{3}}{26}$$

$$\frac{2(15 + 7\sqrt{3})}{26}$$

$$\frac{\sqrt{3} + 7\sqrt{3}}{13}$$

I think $\frac{15 + 7\sqrt{3}}{13}$ unlike terms

Mar 30-10:02 AM

How to add Radicals
 * only "Like" Radicals
 ↓
 what is a Like Radical?
 ① They must have the same Radicals
 ② They must have the same Index.

Examples

$$2\sqrt[3]{x} + 7\sqrt[3]{x}$$

$$2x^{1/3} + 7x^{1/3}$$

$$= 9\sqrt[3]{x} = 9x^{1/3}$$

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$$\sqrt[3]{5} = 5^{1/3}$$

$$\sqrt{4} = 4^{1/2}$$

$$2 = 2^1$$

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$$2\sqrt[3]{5} + 7\sqrt[3]{5}$$

$$\boxed{9\sqrt[3]{5}}$$

$$2x^3 + 7x^3$$

$$9x^3$$

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$$3\sqrt[3]{5} + 7\sqrt{5}$$

unlike Radicals

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10.4

#1) $\sqrt{25} + \sqrt{16}$
 $5 + 4 = 9$

#2) $\sqrt{32} + \sqrt{72}$
 $\sqrt{16 \cdot 2} + \sqrt{36 \cdot 2}$
 $4\sqrt{2} + 6\sqrt{2}$ like radicals
 $10\sqrt{2}$

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#10) $\frac{\sqrt[3]{x^5}}{3} + \frac{3x\sqrt[3]{x^2}}{2}$
 $\frac{2\sqrt[3]{x^5} + 9x\sqrt[3]{x^2}}{6}$
 $\frac{2\sqrt[3]{(x)^3 \cdot x^2} + 9x\sqrt[3]{x^2}}{6}$
 $\frac{2x\sqrt[3]{x^2} + 9x\sqrt[3]{x^2}}{6}$
 $\frac{11x\sqrt[3]{x^2}}{6}$

* Complete #1 - #10 of 10.4

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10.6 Solving Equations

$(\sqrt{x+3})^2 = (3)^2$

* un-do the radical
 * by raising the radical to the power of its index.

$x + 3 = 9$
 $x = 6$ ✓

Check
 $x = 6; \sqrt{x+3} = 3$
 $\sqrt{6+3} = 3$
 $\sqrt{9} = 3$
 $3 = 3$ ✓

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$\sqrt{x+3} = 3$

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