January 14th

Due Today: 6.7 HW

Unit 6: Exponents and Radicals

Lesson 6.8: Adding and Subtracting Radicals

Get Ready: Simplify:

1) $\sqrt{24k^2} \cdot \sqrt{18k^3}$

$\sqrt{432k^5}$

$\sqrt{144}\sqrt{3}\ \sqrt{k^4}\sqrt{k}$

$12\sqrt{3}\ k^2\sqrt{k}$

$12k^2\sqrt{3k}$

2) $\dfrac{5\sqrt{10x^2}}{\sqrt{6x^4}}$

$\dfrac{5\sqrt{5}}{\sqrt{3x^2}}$

$\dfrac{5\sqrt{5}}{x\sqrt{3}} \cdot \dfrac{\sqrt{3}}{\sqrt{3}}$

$\dfrac{5\sqrt{15}}{3x}$

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

$\left(\frac{x}{2}\right)^2 = x$

Homework Review

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$$\frac{4\sqrt{4x^2}}{x\sqrt{3x^3}}$$

x : $\sqrt{x^2}\ \sqrt{x}$

$4 \cdot 2x = 8x$

$$\frac{8x}{x\sqrt{3x}} = \frac{8}{\sqrt{3x}} \cdot \frac{\sqrt{3x}}{\sqrt{3x}}$$

$$= \frac{8\sqrt{3x}}{3x}$$

$\sqrt{3x^3} = \sqrt{3}\sqrt{x^3}$

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

$x \quad \sqrt{x}$

$x\sqrt{3x}$

(12) $\sqrt{5x^3} \cdot \sqrt{5x^2}$

$\sqrt{25x^5}$

$5 \quad \sqrt{x^4} \quad \sqrt{x}$

x^2

$5x^2\sqrt{x}$

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(9) $\sqrt{5}(2+\sqrt{5})$

$2\sqrt{5}+5$

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5) $36r^2\sqrt{2} + 16r\sqrt{16r}$

6) $\dfrac{2x^2y\sqrt{10y}}{5}$

11) $$\frac{5\sqrt{2x^4}}{2\sqrt{5x^3}} \div \frac{5\sqrt{2x}}{2\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}}$$

$$= \frac{5\sqrt{10x}}{2 \cdot 5}$$

$$= \frac{\sqrt{10x}}{2}$$

5) $4\sqrt{6r}\left(3\sqrt{3r^3}+9r\right)$

$12\sqrt{18r^4}+16r\sqrt{6r}$

$\sqrt{9}\sqrt{2}\ r^2$

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$36r^2\sqrt{2}+16r\sqrt{6r}$

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6) $\dfrac{3\sqrt{6x^4y^3}\cdot 2\sqrt{3x^2y^2}}{9\sqrt{5x^2y^2}}$

$\dfrac{6\sqrt{18x^6y^5}}{9\sqrt{5x^2y^2}}$

$\dfrac{2\sqrt{18x^4y^3}}{3\sqrt{5}}$ → $\sqrt{18x^4y^3}$

$\sqrt{9}\ \sqrt{2}\ \sqrt{y^2}\ \sqrt{y}$

$3 \quad x^2 \quad y$

$3x^2y\sqrt{2y}$

$\dfrac{2\cancel{6}x^2y\sqrt{2y}}{\cancel{3}\sqrt{5}}\cdot\dfrac{\sqrt{5}}{\sqrt{5}}$

$\boxed{\dfrac{2x^2y\sqrt{10y}}{5}}$

When adding/subtracting radicals we need LIKE RADICALS.

1. simplify radicals to make like radicals
2. add/subtract!
3. Simplify again if necessary!

1) $10\sqrt{11} + 8\sqrt{11}$

$18\sqrt{11}$

2) $12\sqrt{15} - 4\sqrt{15}$

$8\sqrt{15}$

3) $3\sqrt{6} + 3\sqrt{24}$

$\sqrt{4}\ \sqrt{6}$

$3 \cdot 2\sqrt{6}$

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

$9\sqrt{6}$

4) $3\sqrt{24} - 2\sqrt{54}$

$\sqrt{4}\ \sqrt{6}\quad \sqrt{9}\ \sqrt{6}$

$3 \cdot 2\sqrt{6} - 2 \cdot 3\sqrt{6}$

$6\sqrt{6} - 6\sqrt{6}$

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Practice: Work on these problems. When you get all

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1) $-3\sqrt{21} - 5\sqrt{21}$

2) $5\sqrt{8} + 2\sqrt{8}$

3) $-2\sqrt{54} + 2\sqrt{6}$

4) $2\sqrt{18} + 2\sqrt{8}$

5) $4\sqrt{160} - 5\sqrt{40}$

6) $-5\sqrt{24} - \sqrt{150}$

1) $-8\sqrt{21}$ 2) $14\sqrt{2}$ 3) $-6\sqrt{6}$

4) $10\sqrt{2}$ 5) $6\sqrt{10}$ 6) $5\sqrt{6}$

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Unit 6: Exponents and Radicals

Lesson #	Name	Recap	HW
6.1	Review of basic Exponent Laws		HW 6.1 *unit 5 corrections
6.2	Challenge Practice		HW 6.2
6.3	Exponential Growth and Decay		HW 6.3
6.4	Simplifying Radicals		6.4 VN 6.4 Delta Math
6.5	More Radiclas		HW 6.5 QUIZ WED!
6.6	Quiz + Radicals with variables		HW 6.6
6.7	multiplying and dividing radicals		hw 6.7
6.8	Adding and subtracting Radicals		6.8 Delta math due Monday @ 11pm

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