

Monday November 14, 2011
 HW#13
 Aim: How do we simplify radical expressions of products?
 Test #4 on 11/22/2011 based on HW#14
 HW#9-#20? on 11/30/2011 at 11:45pm
 WED/FRI: Room: 319 3:00pm-4:30pm - Tutoring.
 Do Now: Simplify each expression

1) $\sqrt{72} = 6\sqrt{2}$ 2) $\sqrt{x^5}$ 3) $\sqrt{\frac{24}{9}}$ 4) $\sqrt{\frac{18}{x^2}}$

$\sqrt{x^4} \cdot \sqrt{x}$
 $x^2 \sqrt{x}$

$\frac{\sqrt{24}}{\sqrt{9}} = \frac{2\sqrt{6}}{3}$ $\frac{\sqrt{18}}{\sqrt{x^2}} = \frac{3\sqrt{2}}{x}$

Nov 14-9:06 AM

$\sqrt{72} \left\langle \begin{array}{l} \sqrt{36} \rightarrow 6 \\ \sqrt{2} \end{array} \right\rangle 6\sqrt{2}$ $\sqrt{72} \left\langle \begin{array}{l} \sqrt{24} \\ \sqrt{3} \end{array} \right\rangle$

$\sqrt{72} \left\langle \begin{array}{l} \sqrt{9} \rightarrow 3 \\ \sqrt{8} \end{array} \right\rangle$ $\left. \begin{array}{l} \sqrt{9} = 3 \\ \sqrt{8} = 2\sqrt{2} \end{array} \right\} 6\sqrt{2}$

$\sqrt{12} \left\langle \begin{array}{l} \sqrt{12} \\ \sqrt{6} \end{array} \right\rangle$ $\left. \begin{array}{l} \sqrt{12} \\ \sqrt{3} \end{array} \right\}$

Nov 14-9:44 AM

$\checkmark \sqrt{24} \left\langle \begin{array}{l} \sqrt{12} \left\langle \begin{array}{l} \sqrt{4} \rightarrow 2 \\ \sqrt{3} \end{array} \right\rangle 2\sqrt{6} \\ \sqrt{2} \end{array} \right\rangle$

$\rightarrow \sqrt{24} \left\langle \begin{array}{l} \sqrt{6} \rightarrow \sqrt{6} \\ \sqrt{4} \rightarrow 2 \end{array} \right\rangle 2\sqrt{6}$

$\sqrt{24} \left\langle \begin{array}{l} \sqrt{8} \left\langle \begin{array}{l} \sqrt{4} \rightarrow 2 \\ \sqrt{2} \end{array} \right\rangle 2\sqrt{6} \\ \sqrt{3} \end{array} \right\rangle$

Nov 14-9:48 AM

$\sqrt{18} \left\langle \begin{array}{l} \sqrt{9} \rightarrow 3 \\ \sqrt{2} \end{array} \right\rangle 3\sqrt{2}$

$\sqrt{18} \left\langle \begin{array}{l} \sqrt{6} \\ \sqrt{3} \end{array} \right\rangle$

Nov 14-9:53 AM

I- Multiplication of Radicals

1) $(2\sqrt{5})^2 = 2\sqrt{5} \cdot 2\sqrt{5} = 4\sqrt{25} = 4 \cdot 5 = 20$

$\sqrt{4} \cdot \sqrt{5}$
 $2 \cdot \sqrt{5}$

2) $(3\sqrt{7})^2 = 3\sqrt{7} \cdot 3\sqrt{7} = 9\sqrt{49} = 9 \cdot 7 = 63$

$9 \times \sqrt{49}$
 9×7

Nov 14-9:55 AM

3) $\sqrt{3y} \cdot \sqrt{12y} = \sqrt{36y^2}$

$\sqrt{36} \cdot \sqrt{y^2}$
 $6 \cdot y$

4) $\sqrt{2m} \cdot \sqrt{4m} = \sqrt{8m^2}$

$\sqrt{4} \cdot \sqrt{2} \cdot \sqrt{m^2}$
 $2 \cdot \sqrt{2} \cdot m = 2m\sqrt{2}$

Nov 14-10:02 AM

$$5) \sqrt{3}(7-\sqrt{8}) = 7\sqrt{3} - \sqrt{24}$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$7\sqrt{3} - 2\sqrt{6}$$

$$6) \sqrt{2}(\sqrt{8} + \sqrt{18}) = \sqrt{16} + \sqrt{36} = 4 + 6 = 10$$

$$7) \sqrt{6}(\sqrt{8} - 3) = \sqrt{48} - 3\sqrt{6}$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$4\sqrt{3} - 3\sqrt{6}$$

Nov 14-10:11 AM

$$\sqrt{48} \begin{cases} \rightarrow \sqrt{6} \rightarrow 2\sqrt{6} \rightarrow \sqrt{6} \\ \rightarrow \sqrt{8} \rightarrow \sqrt{4} \rightarrow 2 \end{cases} \left. \begin{matrix} \rightarrow \sqrt{4} \rightarrow 2 \\ \rightarrow \sqrt{2} \rightarrow \sqrt{2} \end{matrix} \right\} 2\sqrt{2} = 2 \cdot 2 \cdot \sqrt{2} = 4\sqrt{2}$$

$$\sqrt{48} \begin{cases} \rightarrow \sqrt{12} \rightarrow \sqrt{4} \rightarrow 2 \\ \rightarrow \sqrt{4} \rightarrow 2 \end{cases} \left. \begin{matrix} \rightarrow \sqrt{3} \rightarrow \sqrt{3} \\ \rightarrow 2 \rightarrow 2 \end{matrix} \right\} 4\sqrt{3}$$

$$\sqrt{48} \begin{cases} \rightarrow \sqrt{6} \rightarrow 4 \\ \rightarrow \sqrt{3} \rightarrow \sqrt{3} \end{cases} \left. \begin{matrix} \rightarrow 4 \\ \rightarrow \sqrt{3} \end{matrix} \right\} 4\sqrt{3}$$

Nov 14-10:20 AM

$$8) (4+\sqrt{3})(5+\sqrt{3}) = 20 + 4\sqrt{3} + 5\sqrt{3} + \sqrt{9}$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

$$20 + 9\sqrt{3} + 3$$

$$\underbrace{\hspace{10em}}_{23+9\sqrt{3}}$$

$$9) (3-\sqrt{8})(2+\sqrt{8}) =$$

$$10) (4+\sqrt{3})^2 =$$

Nov 14-10:23 AM