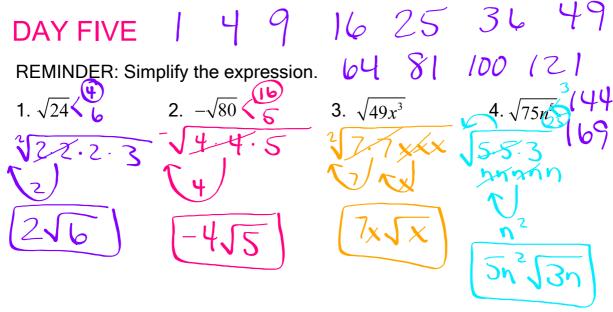
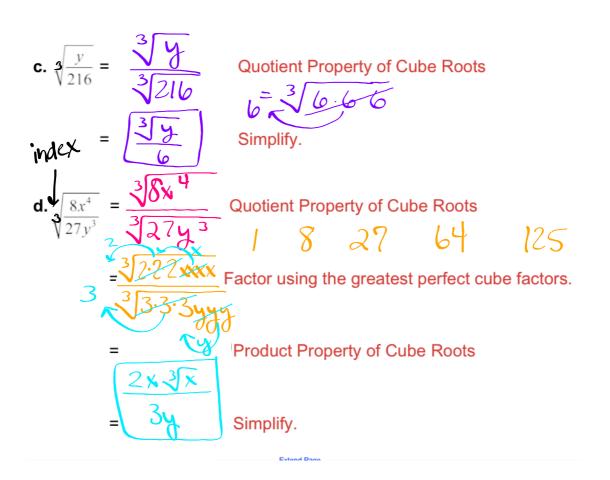
9.1 Simplifying Radical Expressions Cube Roots & Rationalizing DAY FIVE with work

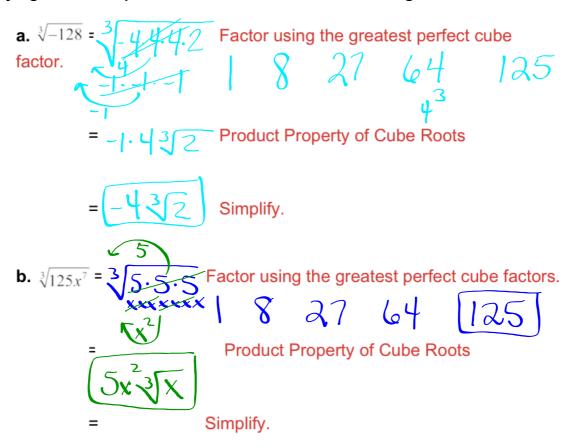
9.1 Simplifying Radical Expressions



Monitoring Progress 1-4



9.1 Simplifying Radical Expressions Cube Roots & Rationalizing DAY FIVE with work



Mar 15-7:31 PM

Examples & Practice:

Simplify the expression.

$$5. \sqrt{\frac{23}{9}} = \sqrt{\frac{17}{100}} = -\sqrt{\frac{17}{100}} = -\sqrt{\frac{36}{2^2}} = \sqrt{\frac{36}{64}} = \sqrt{\frac{4x^2}{64}} = \sqrt{\frac{4x^2}{64}} = \sqrt{\frac{36}{64}} = \sqrt{\frac{36}{$$

Monitoring Progress 5-12

9.1 Simplifying Radical Expressions Cube Roots & Rationalizing DAY FIVE with work

Rationalizing the denominator:

eliminate radicals from denominator..

a.
$$\frac{\sqrt{5}}{\sqrt{3n}} = \frac{\sqrt{5}}{\sqrt{3n}} \bullet \frac{\sqrt{3n}}{\sqrt{3n}}$$
 Multiply by $\frac{\sqrt{3n}}{\sqrt{3n}}$.

$$= \frac{\sqrt{15n}}{\sqrt{9n^2}}$$
 Product Property of Square Roots
$$= \frac{\sqrt{15n}}{\sqrt{9} \bullet \sqrt{n^2}}$$
 Product Property of Square Roots
$$= \frac{\sqrt{15n}}{3n}$$
 Simplify.

b. $\frac{2}{\sqrt[3]{9}} = \frac{2}{\sqrt[3]{9}} \bullet \frac{\sqrt[3]{3}}{\sqrt[3]{3}}$ Multiply by $\frac{\sqrt[3]{3}}{\sqrt[3]{3}}$.
$$= \frac{2\sqrt[3]{3}}{\sqrt[3]{27}}$$
 Product Property of Cube Roots

Simplify.

Example 4

Simplify the expression.

 $= \frac{2\sqrt[3]{3}}{3}$

13.
$$\frac{1}{\sqrt{5}}$$
 $\frac{\sqrt{5}}{\sqrt{5}}$ 14. $\frac{\sqrt{10}}{\sqrt{3}}$ $\frac{\sqrt{3}}{\sqrt{5}}$ 15. $\frac{7}{\sqrt{2x}}$ $\frac{2x}{\sqrt{2x}}$ 16. $\sqrt{\frac{2y^2}{3}} = \frac{\sqrt{2y^2}}{\sqrt{3}}$ $\frac{\sqrt{30}}{\sqrt{3}}$ $\frac{\sqrt{30}}{\sqrt{3}}$ $\frac{\sqrt{30}}{\sqrt{3}} = \frac{\sqrt{30}}{\sqrt{3}}$ 17. $\frac{5}{\sqrt[3]{32}} = \frac{5}{\sqrt[3]{4}}$ $\frac{\sqrt{32}}{\sqrt{32}} = \frac{5\sqrt{2}}{\sqrt[3]{4}}$ $\frac{\sqrt{32}}{\sqrt{32}} = \frac{5\sqrt{2}}{\sqrt[3]{4}}$ $\frac{\sqrt{32}}{\sqrt{32}} = \frac{5\sqrt{2}}{\sqrt[3]{4}}$ $\frac{\sqrt{32}}{\sqrt{32}} = \frac{5\sqrt{2}}{\sqrt[3]{4}}$ $\frac{\sqrt{32}}{\sqrt{32}} = \frac{5\sqrt{2}}{\sqrt[3]{4}}$

Rationalizing the denominator using conjugates.

Conjugates

$$(x+y)(x-y) = x^2 - y^2$$
$$(3x-2y)(3x+2y) = 9x^2 - 4y^2$$
$$(3+2\sqrt{5})(3-2\sqrt{5}) = 9-4(5) = -11$$

Example:
$$\frac{4}{4 - 3\sqrt{3}} = \frac{4}{4 - 3\sqrt{3}} \cdot \frac{4 + 3\sqrt{3}}{4 + 3\sqrt{3}}$$
$$= \frac{16 + 12\sqrt{3}}{4^2 - (3\sqrt{3})^2}$$
$$= \frac{16 + 12\sqrt{3}}{16 - 9(3)}$$
$$= \frac{16 + 12\sqrt{3}}{16 - 9(3)} = \frac{-16 - 12\sqrt{3}}{16 - 12\sqrt{3}}$$

Example 5

HW Assignment:

9.1 DAY FIVE

9.1 WS from WB