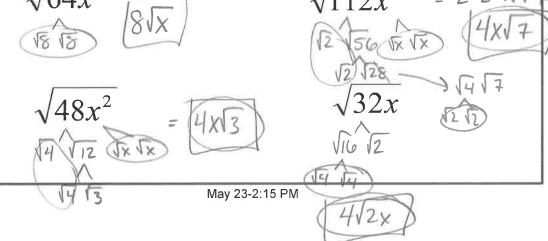
## 1.4A - Operations with Radicals Simplify. $\sqrt{64x} \qquad \sqrt{112x^2} = 2 \cdot 2 \cdot x \sqrt{3}$



An expression is not simplified if a radical is in the denominator

<u>rationalizing the denominator –</u> Getting a square root out of the denominator

"multiply top and bottom by a number that produces a perfect square under the radical sign in the denominator."

Simplify.

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

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Square roots that have the same radicand are called **like radical terms**.

Like Radicals	$\sqrt{2}$ and $3\sqrt{2}$	$-6\sqrt{15}$ and $7\sqrt{15}$	$\sqrt{ab^2}$ and $4\sqrt{ab^2}$
Unlike Radicals	$2\sqrt{5}$ and $\sqrt{2}$	$\sqrt{x}$ and $\sqrt{3x}$	$\sqrt{xy^2}$ and $\sqrt{x^2y}$

To add or subtract square roots, first simplify each radical term and then combine like radical terms by adding or subtracting their coefficients.

Simplify each expression.

$$9\sqrt{3}+7\sqrt{3}$$
 =  $16\sqrt{3}$ 

$$3\sqrt{5} + 10\sqrt{5} = 13\sqrt{5}$$

$$\sqrt{80} - 5\sqrt{5} = 4\sqrt{5} - 5\sqrt{5} = 1/5$$

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 $\sqrt{4}\sqrt{5}$ 

Homework:

WS Operations with Radicals