

Breaking Down Radicals

Example 1: Removing Perfect Squares

I Do	I Do	We Do
<p>① $\sqrt{50}$</p> $\sqrt{25 \cdot 2}$ $\sqrt{25} \cdot \sqrt{2}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">$5\sqrt{2}$</div>	<p>$\sqrt{192}$</p> $\sqrt{96}$ $\sqrt{48}$ $\sqrt{6 \cdot 8}$ $\sqrt{3 \cdot 4}$ $2 \cdot 2 \cdot 2 \sqrt{3}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">$8\sqrt{3}$</div>	<p>① $\sqrt{300}$</p> $\sqrt{100 \cdot 3}$ $\sqrt{100} \cdot \sqrt{3}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">$10\sqrt{3}$</div>
<p>② $\sqrt{50}$</p> $\sqrt{10}$ $\sqrt{2}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">$5\sqrt{2}$</div>	<p>② $\sqrt{300}$</p> $\sqrt{3}$ $\sqrt{100}$ $\sqrt{10}$ $\sqrt{10}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">$10\sqrt{3}$</div>	<p>② $\sqrt{300}$</p> $\sqrt{3}$ $\sqrt{100}$ $\sqrt{10}$ $\sqrt{10}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">$10\sqrt{3}$</div>

We Do	You Do	You Do
$\sqrt{18}$ $\sqrt{9 \cdot 2}$ $\sqrt{9} \cdot \sqrt{2}$ $3\sqrt{2}$	$\sqrt{405}$ $\begin{array}{c} \wedge \\ 5 \quad 81 \\ \hline \end{array}$ $\begin{array}{c} \wedge \\ \cancel{9} \quad \cancel{9} \\ \hline \end{array}$ $9\sqrt{5}$	$\sqrt{252}$ $\begin{array}{c} \wedge \\ \cancel{6} \quad 42 \\ \hline \end{array}$ $\begin{array}{c} \wedge \\ \cancel{6} \quad 7 \\ \hline \end{array}$ $6\sqrt{7}$

Example 2: Multiplying Radicals

I Do	I Do	We Do
$\sqrt{8} \cdot \sqrt{12}$ $\sqrt{96}$ $\begin{array}{c} \wedge \\ 8 \quad 12 \\ \hline \end{array}$ $\begin{array}{c} \wedge \\ \cancel{4} \quad 2 \quad \cancel{4} \quad 3 \\ \hline \end{array}$ $4\sqrt{6}$	$\sqrt{13} \cdot \sqrt{52}$ $\sqrt{13 \cdot 52}$ $\sqrt{676}$ 26	$\sqrt{7} \cdot \sqrt{21}$ $\sqrt{147}$ $\begin{array}{c} \wedge \\ \cancel{7} \quad 21 \\ \hline \end{array}$ $\begin{array}{c} \wedge \\ \cancel{7} \quad 3 \\ \hline \end{array}$ $7\sqrt{3}$