Exponents and Radicals Lesson #4: Entire Radicals and Mixed Radicals - Part Two

Converting Mixed Radicals (with an index of 2) to Entire Radicals

A mixed radical of index 2 may be expressed as an entire radical. This is done by i) converting the number outside the radical symbol into a radical and then 2) multiplying it by the radicand. The number outside the radical symbol can be converted into a radical by raising it to the power of 2.

Complete the following to convert $3\sqrt{14}$ to an entire radical.

$$\begin{array}{ccc} \textit{Mixed Radical} & \Rightarrow & \textit{Entire Radical} \\ \hline 3\sqrt{14} & = & \sqrt{\frac{1}{3}} \times \sqrt{14} \end{array}$$

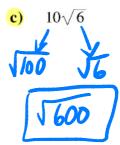
$$=$$
 $\sqrt{9} \times 14$

$$3\sqrt{14} = \sqrt{126}$$

Class Ex. #1

Convert the following mixed radicals to entire radicals.

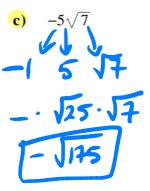
- a) $2\sqrt{5}$
- **b**) $4\sqrt{7}$





Convert the following mixed radicals to entire radicals.

- **a**) $\frac{3}{2}\sqrt{8}$
- **b**) $0.4\sqrt{50}$



Complete Assignment Questions #1 - #2

Converting Mixed Radicals (with an index of 3 or greater) to Entire Radicals

A mixed radical of index 3 may be expressed as an entire radical by 1) converting the number outside the radical symbol into a radical and then 2) multiplying it by the radicand. The number outside the radical symbol can be converted into a radical by raising it to the power of 3.

Complete the following to convert $\frac{1}{2}\sqrt[3]{80}$ to an entire radical.

Mixed Radical
$$\Rightarrow$$
 Entire Radical $\frac{1}{2}\sqrt[3]{80} = \sqrt[3]{\times \sqrt[3]{80}}$ $= \sqrt[3]{\times 80}$ $= \sqrt[3]{80}$



Convert the following mixed radicals to entire radicals.

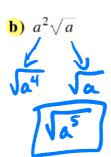
Complete Assignment Questions #3 - #8

Extension: Radicals involving Variables (Mixed to Entire)

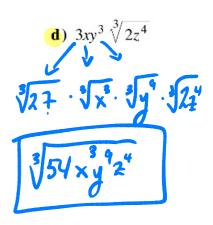
Convert the following mixed radicals to entire radicals.



a) $2\sqrt{x^3}$



c) $x^5\sqrt{xy}$



d) $-3\sqrt[4]{2}$

Complete Assignment Question #9

Copyright © by Absolute Value Publications, This book is NOT covered by the Cancopy agreement.