Practice Run

Complete the table.

$y = \sqrt{x}$	y	Q or $\overline{\text{Q}}$	$y = \sqrt[3]{x}$	y	Q or $\overline{\text{Q}}$
$\sqrt{1}$	1	Q	$\sqrt[3]{1}$		
$\sqrt{2}$			$\sqrt[3]{8}$		
$\sqrt{3}$	1.732050808…	$\overline{\text{Q}}$	$\sqrt[3]{9}$		
$\sqrt{4}$			$\sqrt[3]{27}$		
$\sqrt{5}$				4	Q
$\sqrt{6}$			$\sqrt[3]{70}$		
$\sqrt{7}$	2.645751311…	$\overline{\text{Q}}$	$\sqrt[3]{125}$	5	Q
$\sqrt{8}$			$\sqrt[3]{135}$		
$\sqrt{9}$				6	Q
$\sqrt{10}$				7	Q

Compare your answers.

Complete the table.

$y = \sqrt{x}$	y	Q or $\overline{\text{Q}}$	$y = \sqrt[3]{x}$	y	Q or $\overline{\text{Q}}$
$\sqrt{1}$	1	Q	$\sqrt[3]{1}$	1	Q
$\sqrt{2}$	1.414213562…	$\overline{\text{Q}}$	$\sqrt[3]{8}$	2	Q
$\sqrt{3}$	1.732050808…	$\overline{\text{Q}}$	$\sqrt[3]{9}$	2.080083823…	$\overline{\text{Q}}$
$\sqrt{4}$	2	Q	$\sqrt[3]{27}$	3	Q
$\sqrt{5}$	2.236067977…	$\overline{\text{Q}}$	$\sqrt[3]{64}$	4	Q
$\sqrt{6}$	2.449489743…	$\overline{\text{Q}}$	$\sqrt[3]{70}$	4.1212853…	$\overline{\text{Q}}$
$\sqrt{7}$	2.645751311…	$\overline{\text{Q}}$	$\sqrt[3]{125}$	5	Q
$\sqrt{8}$	2.828427125…	$\overline{\text{Q}}$	$\sqrt[3]{135}$	5.12992784…	$\overline{\text{Q}}$
$\sqrt{9}$	3	Q	$\sqrt[3]{216}$	6	Q
$\sqrt{10}$	3.16227766…	$\overline{\text{Q}}$	$\sqrt[3]{343}$	7	Q

Rules of the Game

C. Equivalent Notation

The product of two square roots is equivalent to the square root of the product.

$$\sqrt{a} \times \sqrt{b} = \sqrt{a \times b}$$

Or

The product of two roots is equivalent to the root of the product.

$$\sqrt[n]{a} \times \sqrt[n]{b} = \sqrt[n]{a \times b}$$

Note: The index is the same for all three radicals.