

Quotient Rule for Roots

Quotient Property for Square Roots

If \sqrt{a} and \sqrt{b} are real numbers, where $b \neq 0$, then $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

Concept: The root of a quotient can be written as the root of the numerator divided by the root of the denominator.

$$\sqrt{\frac{144x^2}{36y^2}} = \frac{\sqrt{144x^2}}{\sqrt{36y^2}} = \frac{12x}{6y} = \frac{2x}{y}$$

Sometimes, it helps to combine the radicals as one: $\frac{\sqrt{72}}{\sqrt{2}} = \sqrt{\frac{72}{2}} = \sqrt{36} = 6$

TRY:

$$\sqrt{\frac{9}{144}}$$

$$\frac{\sqrt{50}}{\sqrt{2}}$$

$$\sqrt{\frac{8}{81}}$$

$$\sqrt{\frac{9a^2}{49b^4}}$$