

S.3 Radical Expressions

Rationalizing the denominator

Cannot have a root in the denominator so we do is multiply by the root in the denominator.

Ex: $\sqrt{\frac{4}{x}}$

S.3 Radical Expressions

Rationalizing the denominator

Cannot have a root in the denominator so ^{what} we do is multiply by the root in the denominator (for square roots)

$$\begin{aligned} \text{Ex: } \sqrt{\frac{4}{x}} &= \frac{\sqrt{4}}{\sqrt{x}} = \frac{2 \cdot \sqrt{x}}{\sqrt{x} \cdot \sqrt{x}} \\ &= \frac{2\sqrt{x}}{\sqrt{x^2} \rightarrow x^{\frac{2}{2}}} \\ &= \frac{2\sqrt{x}}{x} \end{aligned}$$

$$\sqrt{\frac{45}{4x^3}}$$

$$= \frac{\sqrt{45}}{\sqrt{4} \sqrt{x^3}} \times \frac{x^{\frac{3}{2}}}{x^{\frac{3}{2}}}$$

$$= \frac{\sqrt{9} \cdot \sqrt{5}}{2x\sqrt{x}}$$

$$= \frac{3\sqrt{5}}{2x\sqrt{x}} \cdot \frac{\sqrt{x}}{\sqrt{x}}$$

$$= \frac{3\sqrt{5x}}{2x\sqrt{x^2}} \rightarrow x^{\frac{3}{2}}$$

$$= \frac{3\sqrt{5x}}{2x^2}$$

HW: P.
329

2-100 even,
odds extra
credit

Adding + Subtracting

① same root

② must have the same radicand \sqrt{a}

$$5\sqrt{2} - 7\sqrt{2}$$

$$1\sqrt{5} + 3\sqrt{5}$$

$$\sqrt{25y} + \sqrt{81y}$$

$$\sqrt{12y} + \sqrt{75y^5}$$

HW: P. 329

3-99 mult.
of 3.