

Multiplying Radicals

When multiplying radicals, we

1. _____
2. _____
3. _____

Product Property: For $a \geq 0, b \geq 0$: $\sqrt{a}\sqrt{b} = \sqrt{ab}$

Example: $2\sqrt{2} \times 3\sqrt{7}$

$(2+3\sqrt{5})(3-2\sqrt{6})$

Simplify the following

a) $(3\sqrt{6})(-2\sqrt{5})$

b) $(2+\sqrt{3})(2-\sqrt{3})$

c) $(2+\sqrt{3})(2-\sqrt{5})$

Dividing Radicals

When dividing radicals,

1. _____

2. _____

3. _____

Quotient Property: For $a \geq 0, b > 0$: $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

Example: Simplify

a) $\frac{6\sqrt{48}}{2\sqrt{6}}$

b) $\frac{7\sqrt{12}}{\sqrt{3}}$

c) $\frac{21\sqrt{8}}{9\sqrt{16}}$

Rationalizing the Denominator

A radical is not in simplest form if there is a radical in the denominator.

To eliminate this, we 1. _____

2. _____

3. _____

Simplify each of the following, writing your answer with a positive denominator.

a) $\frac{1}{\sqrt{3}}$

b) $\frac{4\sqrt{3}}{\sqrt{5}}$

c) $\frac{3+\sqrt{2}}{2\sqrt{3}}$