Section 4.2: Adding and Subtracting Radicals

Example: Identify the index and radicand.

$(a)\ \sqrt[3]{24}$ $(b)\ \sqrt{42}$

Like Radicals

↳ Radicals with the same radicand and index

Think About: Like terms ⟶ terms with the same variable and the same exponent are like terms.

Example: $2x+3x$

$-x^2+5x^2$

Section 4.2 Add/Subtract Radicals

Example: Which of the following pairs of radicals are like radicals? Explain.

a) $2\sqrt{7}$ and $4\sqrt{7}$

b) $4\sqrt[3]{5}$ and $6\sqrt[3]{5}$

c) $\sqrt{3}$ and $\sqrt[3]{3}$

d) $2\sqrt[4]{5}$ and $\sqrt[4]{7}$

Adding and Subtracting Radicals

Example: Add or subtract the following

$(A)\quad 6\sqrt{3}+2\sqrt{3}$

$(B)\quad 6\sqrt{3}-2\sqrt{3}$

$(C)\quad 6\sqrt{2}+4\sqrt{5}$

Section 4.2 Add/Subtract Radicals

Example: Add or subtract the following:

a) $5\sqrt{3}+8\sqrt{3}$

b) $2\sqrt{6}-5\sqrt{6}$

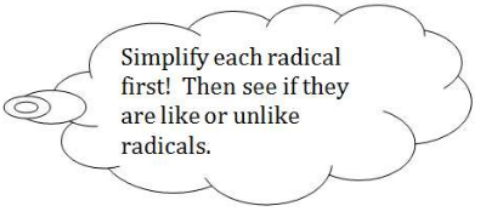
c) $7\sqrt{15}-2\sqrt{15}$

d) $5\sqrt[3]{7}-3\sqrt[3]{7}$

e) $-\sqrt[3]{5}+4\sqrt{2}+6\sqrt[3]{5}-7\sqrt{2}$

Example: Can we add the following?

$4\sqrt{8}+7\sqrt{18}$



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Section 4.2 Add/Subtract Radicals

Example: Simplify the following expressions

a) $3\sqrt{24}-5\sqrt{6}+\sqrt{54}$

b) $-5\sqrt{12}-2\sqrt{75}+\sqrt{300}$

c) $5\sqrt[3]{81}-3\sqrt[3]{24}+6\sqrt[3]{3}$

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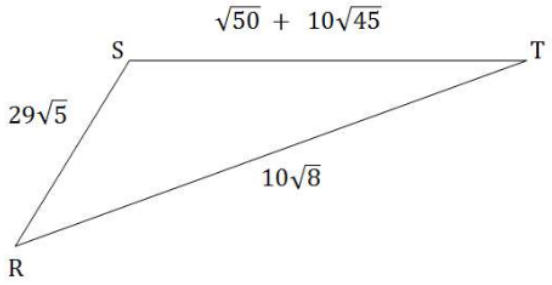
Section 4.2 Add/Subtract Radicals

Example: Write a simplified expression for the perimeter of the triangle.



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+ common errors questions