

Pre-Calculus 11 - VLN

Chapter 5: Radicals

Lesson 3: Adding and Subtracting Radicals

Question #1

Reference Q.20360

A student rationalized the denominator of $\frac{\sqrt{3}}{3\sqrt{7}}$ using two different methods. Their first steps are below. Continue from each of these steps and simplify the expression.

a. $= \frac{\sqrt{3}}{3\sqrt{7}} \times \frac{\sqrt{7}}{\sqrt{7}}$

b. $= \frac{\sqrt{3}}{3\sqrt{7}} \times \frac{3\sqrt{7}}{3\sqrt{7}}$

c. Which method required less steps? Explain why.

Question #2

Reference Q.20485

Without using a calculator, what is the best way to compare two radicals such as $2\sqrt{5}$ and $\sqrt{10}$?

Question #3

Reference Q.20486

Change each of the following mixed radicals to entire radicals:

a. $3\sqrt{5}$

b. $5\sqrt{2}$

c. $4\sqrt{3}$

Question #4

Reference Q.20487

Order the following radicals in ascending order:

$\sqrt{10}, 4\sqrt{5}, 2\sqrt{15}, \sqrt{50}$

Question #5

Reference Q.20488

Order the following radicals in ascending order:

$7\sqrt{5}, 2\sqrt{10}, 6\sqrt{3}, 3\sqrt{6}$

Question #6

Reference Q.14335

Arrange the following radicals in order from greatest to least.

$3\sqrt{7}, 5\sqrt{3}, \sqrt{60}, 2\sqrt{11}, \frac{1}{2}\sqrt{200}$

Question #7

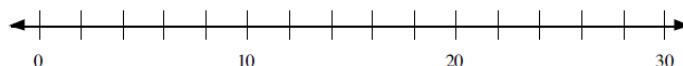
Reference Q.14341

To the nearest hundredth, the value of $5\sqrt[3]{7}$ is ____.

Question #8

Reference Q.14337

Order the following rational numbers on the number line.



a) $\sqrt{50}$

b) $\sqrt[3]{50}$

c) $5\sqrt{10}$

d) $5\sqrt[3]{10}$

e) $10\sqrt{5}$

f) $10\sqrt[3]{5}$

Question #9

Reference Q.14293

Determine whether each statement is true or false.

a. $\sqrt{9} + \sqrt{4}$ is equal to $\sqrt{9+4}$.

b. $\sqrt{9} - \sqrt{4}$ is equal to $\sqrt{9-4}$.

c. $\sqrt{9} \times \sqrt{4}$ is equal to $\sqrt{9 \times 4}$.

d. $\sqrt{9} \div \sqrt{4}$ is equal to $\sqrt{9 \div 4}$.

Question #10

Reference Q.20478

What is needed in order to combine radicals when adding and subtracting.

Question #11

Reference Q.20479

Simplify each of the following radical expressions:

a. $\sqrt{7} + 3\sqrt{7}$

b. $2\sqrt{10} - 4\sqrt{10}$

c. $12\sqrt{2} + 4\sqrt{2} - 7\sqrt{2}$

Question #12

Reference Q.20480

Simplify each of the following radical expressions:

a. $\sqrt[3]{5} + 9\sqrt[3]{5}$

b. $8\sqrt[5]{16} - 4\sqrt[5]{16}$

c. $2\sqrt[4]{2} - 5\sqrt[4]{2} - \sqrt[4]{2}$

Question #13

Reference Q.20481

Explain why we cannot combine the following radicals:

a. $\sqrt{5} + 9\sqrt[3]{5}$

b. $8\sqrt[5]{16} - 4\sqrt[5]{2}$

Question #14

Reference Q.20482

Combine each expression by first writing as mixed radicals.

a. $\sqrt{20} + 3\sqrt{5}$

b. $\sqrt{32} - \sqrt{72}$

c. $\sqrt{99} + \sqrt{12} - \sqrt{48}$