

Adding and Subtracting Radicals

N.RN.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents. (i.e., simplify and/or use the operations of addition, subtraction, and multiplication, with radicals within expressions limited to square roots).

A.APR.1 Add, subtract, and multiply polynomials; understand that polynomials form a system analogous to the integers in that they are closed under these operations.

What am I learning today?

How to combine like terms in radical form

How will I show that I learned it?

Simplify an expression and explain why my final answer cannot be further simplified

For all addition and subtraction
problems we use **CLT!**
(Combining Like Terms)

Match the like terms

$$3x^2$$
$$-7x^2$$

$$12xy$$
$$6.2xy$$

$$5\sqrt{2}$$
$$3\sqrt{2}$$

$$-4x^2\sqrt{x}$$
$$x^2\sqrt{x}$$

When combining like terms, we add or subtract the coefficients only.

Ex. 1 $3\sqrt{2} - 2\sqrt{3} + 5\sqrt{2}$

$$8\sqrt{2} - 2\sqrt{3}$$

Ex. 2 $5\sqrt{6} + 3\sqrt{6} - 7\sqrt{2} + 9\sqrt{2}$

$$8\sqrt{6} + 2\sqrt{2}$$

When adding and subtracting radicals, simplify each radical before combining.

$$7\sqrt{96} + 5\sqrt{32}$$
$$4\cancel{7}\sqrt{\cancel{16}\cdot 6} + \underset{4}{\cancel{5}}\sqrt{\cancel{16}\cdot 2}$$
$$28\sqrt{6} + 20\sqrt{2}$$

$$-\sqrt{18} - \sqrt{50} + \sqrt{2}$$

$-\sqrt{9 \cdot 2} \quad -\sqrt{25 \cdot 2}$

$$-3\sqrt{2} - 5\sqrt{2} + \sqrt{2}$$

$-7\sqrt{2}$

$$3\sqrt{20} + 5\sqrt{45} - 7\sqrt{5}$$

$$\frac{3}{2}\sqrt{4 \cdot 5} + \frac{5}{3}\sqrt{9 \cdot 5}$$

$$\underline{6\sqrt{5}} + \underline{15\sqrt{5}} - \underline{7\sqrt{5}}$$

$14\sqrt{5}$

HW: pg. 8 - 9

