

A fraction with a radical in the denominator is NOT SIMPLIFIED!

You multiply the fraction top & bottom by the radical in the denominator. Then simplify.

Examples:

$$8 \quad \frac{7}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{7\sqrt{6}}{\sqrt{36}} = \boxed{\frac{7\sqrt{6}}{6}}$$

$$9 \quad \frac{\sqrt{3}}{\sqrt{5a}} \cdot \frac{\sqrt{5a}}{\sqrt{5a}} = \boxed{\frac{\sqrt{15a}}{5a}}$$

$\sqrt{25a^2}$

Rationalize the Denominator

Add & Subtract

ONLY "like radicals" can be added or subtracted.

- ① Simplify all radicals.
- ② Add/subtract the coefficients of "like radicals".

$$5x + 3x = 8x$$

$$5y^2 + 3y^2 = 8y^2$$

$$5\sqrt{2} + 3\sqrt{2} = 8\sqrt{2}$$

Examples:

$$10 \quad 7\sqrt{14} + \sqrt{21} - 4\sqrt{14}$$

$$\boxed{3\sqrt{14} + \sqrt{21}}$$

$$11 \quad 5\sqrt{7} + \sqrt{28}$$

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

$$\boxed{7\sqrt{7}}$$

$$\begin{array}{r} 28 \\ \sqrt{28} \\ \sqrt{2 \cdot 2 \cdot 7} \end{array}$$

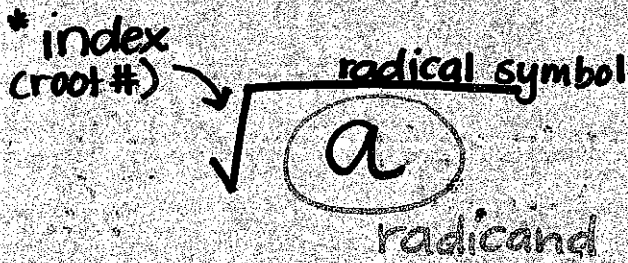
$$2\sqrt{7}$$

Add & Subtract

Prime #'s:

2, 3, 5, 7, 11, 13, 17, 19,
23, 29, 31, 37, 41, 43,
47

Parts of a Radical:



* Note: If there is NO # here, it is automatically 2 for "square root"