

Rule - You may add/subtract square roots only if the numbers inside the square root are the same.

$$\begin{array}{c} \text{add} \\ \hline 3\sqrt{2} + 5\sqrt{2} \rightarrow 8\sqrt{2} \text{ not } \cancel{8\sqrt{4}} \\ \text{match} \end{array}$$

$$\begin{array}{c} \text{add} \\ \hline 3x + 5x \rightarrow 8x \\ \text{match} \end{array}$$

$$\begin{array}{c} \text{subtract} \\ \hline 10\sqrt{7} - 2\sqrt{7} \rightarrow 8\sqrt{7} \text{ not } \cancel{8\sqrt{5}} \\ \text{match} \end{array}$$

$$5\sqrt{6} + 2\sqrt{10} \rightarrow 5\sqrt{6} + 2\sqrt{10} \text{ Does Not Simplify}$$

do not match

$\sqrt{6}$ and $\sqrt{10}$ cannot be broken down

$$2\sqrt{3} - \sqrt{5} \rightarrow \text{Does Not Simplify}$$

do not match

cannot be broken down

$$5\sqrt{12} + \sqrt{75} \rightarrow 5 \cdot 2\sqrt{3} + 5\sqrt{3} \rightarrow 10\sqrt{3} + 5\sqrt{3} \rightarrow 15\sqrt{3}$$

do not match

match

$\sqrt{12} \rightarrow \sqrt{4} \cdot \sqrt{3} \rightarrow 2\sqrt{3}$

$\sqrt{75} \rightarrow \sqrt{25} \cdot \sqrt{3} \rightarrow 5\sqrt{3}$

$$\begin{array}{c} \text{do not match} \\ \hline \sqrt{20} - 3\sqrt{5} \rightarrow 2\sqrt{5} - 3\sqrt{5} \rightarrow -1\sqrt{5} \\ \text{does not break down} \end{array}$$

OR

$-\sqrt{5}$

$\sqrt{20} \rightarrow \sqrt{4} \cdot \sqrt{5} \rightarrow 2\sqrt{5}$