

Like terms can be added or subtracted. Like radical terms have the same index and radicand. For example, $3\sqrt{5}$ and $-11\sqrt{5}$ are like terms.

Steps to Simplify the Addition or Subtraction of Radical Terms

- Write original problem. $4\sqrt{45} + 6\sqrt{7} - 13\sqrt{20}$
- On the side, simplify each radical term. $= 12\sqrt{5} + 6\sqrt{7} - 26\sqrt{5}$

$$\begin{aligned} 4\sqrt{45} &= 4\sqrt{9 \cdot 5} \\ &= 4\sqrt{9}\sqrt{5} \\ &= 4(3\sqrt{5}) \\ &= 12\sqrt{5} \end{aligned}$$
- Move like radical terms together. $= 12\sqrt{5} - 26\sqrt{5} + 6\sqrt{7}$

$$\begin{aligned} 13\sqrt{20} &= 13\sqrt{4 \cdot 5} \\ &= 13\sqrt{4}\sqrt{5} \\ &= 13(2\sqrt{5}) \\ &= 26\sqrt{5} \end{aligned}$$
- Add or subtract numbers in front of radicals. Do not change the indexes or the radicands. $= -14\sqrt{5} + 6\sqrt{7}$