

AA PREP: OPERATIONS WITH RADICALS (ADDING & SUBTRACTING)—WORKSHEET #2

Perform the operation. Simplify.

1) $1\sqrt{13} - 1\sqrt{13} \quad (1-1)\sqrt{13}$ $\boxed{0}$	2) $1\sqrt{2} + 1\sqrt{2} \quad (1+1)\sqrt{2}$ $\boxed{2\sqrt{2}}$
3) $5\sqrt{3} + \sqrt{2}$ $\boxed{5\sqrt{3} + \sqrt{2}}$	4) $4\sqrt{6} - 1\sqrt{6} \quad (4-1)\sqrt{6}$ $\boxed{3\sqrt{6}}$
5) $14\sqrt{5} + 7\sqrt{5} \quad (14+7)\sqrt{5}$ $\boxed{21\sqrt{5}}$	6) $6\sqrt{13} + \sqrt{52}$ $\begin{array}{l} 4\sqrt{13} \\ \quad \uparrow \\ 2\sqrt{2} \\ 6\sqrt{13} + 2\sqrt{13} \\ (6+2)\sqrt{13} \\ \boxed{8\sqrt{13}} \end{array}$
7) $\sqrt{288} + \sqrt{200}$ $\begin{array}{l} 144 \quad 100 \\ \uparrow \quad \uparrow \\ 12 \quad 10 \\ 12\sqrt{2} + 10\sqrt{2} \\ (12+10)\sqrt{2} \\ \boxed{22\sqrt{2}} \end{array}$	8) $10\sqrt{5} - 10\sqrt{7}$ $\boxed{10\sqrt{5} - 10\sqrt{7}}$
9) $\sqrt{8} - 5\sqrt{12}$ $\begin{array}{l} 4 \quad 4 \\ \uparrow \quad \uparrow \\ 2 \quad 2 \\ 2\sqrt{2} - 5 \cdot 2\sqrt{3} \\ \boxed{2\sqrt{2} - 10\sqrt{3}} \end{array}$	10) $\sqrt{54} + 7\sqrt{24}$ $\begin{array}{l} 9 \quad 4 \\ \uparrow \quad \uparrow \\ 3 \quad 2 \\ 3\sqrt{6} + 7 \cdot 2\sqrt{6} \\ 3\sqrt{6} + 14\sqrt{6} \\ (3+14)\sqrt{6} \\ \boxed{17\sqrt{6}} \end{array}$
11) $\sqrt{72} + 5\sqrt{36} - \sqrt{2}$ $\begin{array}{l} 36 \quad 6 \\ \uparrow \quad \uparrow \\ 6 \quad 6 \\ 6\sqrt{2} + 5 \cdot 6 - \sqrt{2} \\ 6\sqrt{2} + 30 - \sqrt{2} \\ (6-1)\sqrt{2} + 30 \\ \boxed{5\sqrt{2} + 30} \end{array}$	12) $\sqrt{144} - \sqrt{80} - 6\sqrt{45}$ $\begin{array}{l} 12 \quad 16 \quad 9 \\ \uparrow \quad \uparrow \quad \uparrow \\ 4 \quad 4 \quad 3 \\ 12 - 4\sqrt{5} - 6 \cdot 3\sqrt{5} \\ 12 - 4\sqrt{5} - 18\sqrt{5} \\ 12 + (-4-18)\sqrt{5} \\ \boxed{12 - 22\sqrt{5}} \end{array}$