

# AA PREP: OPERATIONS WITH RADICALS (ADDING & SUBTRACTING) LECTURE

Perform the operation. Simplify.

<p>1) <math>\sqrt{7} + \sqrt{7} = \boxed{2\sqrt{7}}</math></p>	<p>2) <math>\sqrt{5} + \sqrt{5} = \boxed{2\sqrt{5}}</math></p>
<p>3) <math>2\sqrt{6} + 3\sqrt{6} = \boxed{5\sqrt{6}}</math></p>	<p>4) <math>9\sqrt{3} + \sqrt{3} = \boxed{10\sqrt{3}}</math></p>
<p>5) <math>4\sqrt{10} - 9\sqrt{10} = \boxed{-5\sqrt{10}}</math></p>	<p>6) <math>3\sqrt{2} - 8\sqrt{2} = \boxed{-5\sqrt{2}}</math></p>
<p>7) <math>11\sqrt{5} + 11\sqrt{6} = \boxed{11\sqrt{5} + 11\sqrt{6}}</math>  <small>↓ CAN ONLY COMBINE IF RADICANDS MATCH.</small></p>	<p>8) <math>12\sqrt{7} + 12\sqrt{3} = \boxed{12\sqrt{7} + 12\sqrt{3}}</math></p>
<p>9) <math>3\sqrt{8} - \sqrt{50}</math>  <math>\begin{matrix} \hat{4} \hat{2} &amp; \hat{25} \hat{2} \\ \hat{2} \hat{2} &amp; \hat{5} \hat{5} \end{matrix}</math>  <math>3 \cdot 2\sqrt{2} - 5\sqrt{2} = 1\sqrt{2} = \boxed{\sqrt{2}}</math></p>	<p>10) <math>4\sqrt{27} + 5\sqrt{48}</math>  <math>\begin{matrix} \hat{9} \hat{3} &amp; \hat{16} \hat{3} \\ \hat{3} \hat{3} &amp; \hat{4} \hat{4} \end{matrix}</math>  <math>4 \cdot 3\sqrt{3} + 5 \cdot 4\sqrt{3} = 12\sqrt{3} + 20\sqrt{3} = \boxed{32\sqrt{3}}</math></p>
<p>11) <math>\sqrt{125} + 3\sqrt{20} - \sqrt{24}</math>  <math>\begin{matrix} \hat{25} \hat{5} &amp; \hat{4} \hat{5} &amp; \hat{4} \hat{6} \\ \hat{5} \hat{5} &amp; \hat{2} \hat{2} &amp; \hat{2} \hat{2} \end{matrix}</math>  <math>5\sqrt{5} + 3 \cdot 2\sqrt{5} - 2\sqrt{6}</math>  <math>5\sqrt{5} + 6\sqrt{5} - 2\sqrt{6} = \boxed{11\sqrt{5} - 2\sqrt{6}}</math></p>	<p>12) <math>2\sqrt{54} - \sqrt{28} + 5\sqrt{96}</math>  <math>\begin{matrix} \hat{9} \hat{6} &amp; \hat{4} \hat{7} &amp; \hat{16} \hat{6} \\ \hat{3} \hat{3} &amp; \hat{2} \hat{2} &amp; \hat{4} \hat{4} \end{matrix}</math>  <math>2 \cdot 3\sqrt{6} - 2\sqrt{7} + 5 \cdot 4\sqrt{6}</math>  <math>6\sqrt{6} - 2\sqrt{7} + 20\sqrt{6} = \boxed{26\sqrt{6} - 2\sqrt{7}}</math></p>