

Name: _____

Period: _____ Date: _____

Adding and Subtracting Square Roots **Answers**

if: $3x + 7x - 6x = 4x$

if: $4y + 7 - 2y - 13 = 2y - 6$

then: $3\sqrt{5} + 7\sqrt{5} - 6\sqrt{5} = 4\sqrt{5}$

then: $4\sqrt{3} + 7 - 2\sqrt{3} - 13 = 2\sqrt{3} - 6$

or simplify radicals to be able to combine

ie: $5\sqrt{18} - 2\sqrt{2} = 5\sqrt{3 \cdot 3 \cdot 2} - 2\sqrt{2} = 5 \cdot 3\sqrt{2} - 2\sqrt{2} = 15\sqrt{2} - 2\sqrt{2} = 13\sqrt{2}$

Section I. Combine like terms to simplify

1. $3\sqrt{2} - 6\sqrt{2} + 10\sqrt{2} = 7\sqrt{2}$

2. $5\sqrt{11} - 7 - 2\sqrt{11} + 13 + 18\sqrt{11} = 21\sqrt{11} + 6$

3. $6 + 9\sqrt{3} - 10 = 9\sqrt{3} - 4$

4. $2\sqrt{5} - 6\sqrt{13} - 10 + 3\sqrt{5} + 7 = 5\sqrt{5} - 6\sqrt{13} - 3$

5. $3\sqrt{12} - 4\sqrt{27} \rightarrow 6\sqrt{3} - 12\sqrt{3} = -6\sqrt{3}$

6. $6 + 9\sqrt{125} + 7 - 2\sqrt{45} \rightarrow 6 + 40\sqrt{5} + 7 - 6\sqrt{5} = 13 + 34\sqrt{5}$

7. $6\sqrt{18} - 4\sqrt{100} - 10\sqrt{50} + 3\sqrt{196} \rightarrow 18\sqrt{2} - 40 - 50\sqrt{2} + 42 = -32\sqrt{2} + 2$