

Adding and Subtracting Radical Expressions

Simplify.

$$1. \sqrt{114 + 82} = \sqrt{196} = 14$$

$$2. -4\sqrt{361} = -4 \cdot 19 = -76$$

$$3. 5(\sqrt{9} - \sqrt{4}) = 5(3 - 2) = 5(1) = 5$$

$$4. 10(\sqrt{81} + 6\sqrt{4}) = 10(9 + 6 \cdot 2) \\ = 10(9 + 12) \\ = 10(21) = 210$$

$$5. \sqrt{500 - 100} = \sqrt{400} = 20$$

$$6. 4\sqrt{6} + 2\sqrt{6} = 6\sqrt{6}$$

$$7. \sqrt{15} + 10\sqrt{15} = 11\sqrt{15}$$

$$8. \sqrt{11} - 2\sqrt{11} + 6\sqrt{11} = 5\sqrt{11}$$

$$9. 6\sqrt{225} - 3\sqrt{16} = 6 \cdot 15 - 3 \cdot 4 \\ 90 - 12 = 78$$

$$10. 4\sqrt{21} + 21\sqrt{21} + 6\sqrt{6} - 2\sqrt{6} = 25\sqrt{21} + 4\sqrt{6}$$

$$11. 10\sqrt{10} - 2\sqrt{64} + 4\sqrt{64} + \sqrt{10} = 11\sqrt{10} + 16$$

$$11\sqrt{10} + 2\sqrt{64} = 11\sqrt{10} + 2 \cdot 8$$

$$12. 3\sqrt{9} - 4\sqrt{4} - 2\sqrt{9} + 6\sqrt{4} = 7$$

$$\sqrt{9} + 2\sqrt{4}$$

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

$$3 + 2 \cdot 2 \\ 3 + 4$$