

Adding and Subtracting Square Root Expressions

Simplify each expression.

$$1. 7\sqrt{15} + 6\sqrt{71} - 10\sqrt{71} + 3\sqrt{15} =$$

$$10\sqrt{15} - 4\sqrt{71}$$

$$3. -7\sqrt{11} + 2\sqrt{11} - 11\sqrt{23} + 4\sqrt{23} =$$

$$-5\sqrt{11} - 7\sqrt{23}$$

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

$$2\sqrt{4} + 5\sqrt{7} = 4 + 5\sqrt{7}$$

$$7. 3\sqrt{25} + 2\sqrt{25} + 8\sqrt{17} - 7\sqrt{17} =$$

$$5\sqrt{25} + \sqrt{17} = 25 + \sqrt{17}$$

$$9. 12\sqrt{21} - 6\sqrt{11} + 4\sqrt{21} + 9\sqrt{11} =$$

$$16\sqrt{21} + 3\sqrt{11}$$

$$11. -\sqrt{19} + 2\sqrt{31} - 4\sqrt{31} + 5\sqrt{19} =$$

$$4\sqrt{19} - 2\sqrt{31}$$

$$13. 7\sqrt{11} - 2\sqrt{11} + \sqrt{81} =$$

$$5\sqrt{11} + 9$$

$$15. 5\sqrt{13} - 3\sqrt{4} + 6\sqrt{13} =$$

$$11\sqrt{13} - 3\sqrt{4} = 11\sqrt{13} - 6$$

$$17. 5\sqrt{42} - 2\sqrt{42} - 10\sqrt{26} + 5\sqrt{26} =$$

$$3\sqrt{42} - 5\sqrt{26}$$

$$19. 6\sqrt{16} + 4\sqrt{16} + 9\sqrt{17} - 8\sqrt{17} =$$

$$10\sqrt{16} + \sqrt{17}$$

$$40 + \sqrt{17} = 40 + \sqrt{17}$$

$$2. 12\sqrt{10} - 5\sqrt{7} - 6\sqrt{10} =$$

$$6\sqrt{10} - 5\sqrt{7}$$

$$4. 4\sqrt{3} - 7\sqrt{13} + 2\sqrt{3} - 9\sqrt{13} =$$

$$6\sqrt{3} - 16\sqrt{13}$$

$$6. 4\sqrt{6} + 5\sqrt{5} - 14\sqrt{6} - 11\sqrt{5} =$$

$$-6\sqrt{6} - 6\sqrt{5}$$

$$8. 5\sqrt{10} - 6\sqrt{64} + 6\sqrt{10} + 8\sqrt{64} =$$

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

$$10. 2\sqrt{3} - 14\sqrt{7} - 6\sqrt{7} + 20\sqrt{3} =$$

$$22\sqrt{3} - 20\sqrt{7}$$

$$12. 3\sqrt{41} + 2\sqrt{6} - 7\sqrt{41} - 8\sqrt{6} =$$

$$-4\sqrt{41} - 6\sqrt{6}$$

$$14. 4\sqrt{23} + 5\sqrt{15} - 11\sqrt{23} - 9\sqrt{15} =$$

$$-7\sqrt{23} - 4\sqrt{15}$$

$$16. 9\sqrt{9} + 4\sqrt{100} - 6\sqrt{9} + 10\sqrt{100} =$$

$$3\sqrt{9} + 14\sqrt{100} = 9 + 140 = 149$$

$$18. 6\sqrt{7} + 8\sqrt{15} - 6\sqrt{7} + 2\sqrt{15} =$$

$$10\sqrt{15}$$

$$20. 4\sqrt{31} - 9\sqrt{31} - 8\sqrt{11} + 3\sqrt{3} =$$

$$-5\sqrt{31} - 8\sqrt{11} + 3\sqrt{3}$$