Multiplying Radicals of Index 2: No Variable Factors

Simplify.

1) $\sqrt{3} \cdot \sqrt{12}$

2) $\sqrt{8} \cdot \sqrt{2}$

3) $-4\sqrt{2} \cdot \sqrt{12}$

4) $2\sqrt{3} \cdot \sqrt{12}$

5) $-3\sqrt{15} \cdot -4\sqrt{6}$

6) $5\sqrt{15} \cdot 5\sqrt{20}$

7) $\sqrt{6}(\sqrt{3} + \sqrt{10})$

8) $\sqrt{3}(\sqrt{3} + 3)$

9) $-5\sqrt{5}(5 + \sqrt{3})$

10) $\sqrt{6}(3 + 5\sqrt{2})$

11) $-\sqrt{2}(5\sqrt{10} + 5)$

12) $3\sqrt{3}(-4\sqrt{10} + 5\sqrt{3})$

13) $(\sqrt{3} + \sqrt{2})(\sqrt{3} - \sqrt{2})$

14) $(5 + \sqrt{2})(1 + \sqrt{2})$

15) $(2\sqrt{3} - 2)(\sqrt{3} - 1)$

16) $(1 - 4\sqrt{2})(4 + \sqrt{2})$

17) $(5\sqrt{5} + 4\sqrt{2})(-2\sqrt{5} + 2\sqrt{2})$

18) $(4 - 3\sqrt{2})(4 + 3\sqrt{2})$

19) $(5\sqrt{2} + 2\sqrt{3})(-5\sqrt{2} + 3\sqrt{3})$

20) $(-2\sqrt{2} - 2\sqrt{3})(-\sqrt{2} - \sqrt{3})$

Answers to Multiplying Radicals of Index 2: No Variable Factors

1) 6

2) 4

3) $-8\sqrt{6}$

4) 12

5) $36\sqrt{10}$

6) $250\sqrt{3}$

7) $3\sqrt{2} + 2\sqrt{15}$

8) $3 + 3\sqrt{3}$

9) $-25\sqrt{5} - 5\sqrt{15}$

10) $3\sqrt{6} + 10\sqrt{3}$

11) $-10\sqrt{5} - 5\sqrt{2}$

12) $-12\sqrt{30} + 45$

13) 1

14) $7 + 6\sqrt{2}$

15) $8 - 4\sqrt{3}$

16) $-4 - 15\sqrt{2}$

17) $-34 + 2\sqrt{10}$

18) -2

19) $-32 + 5\sqrt{6}$

20) $10 + 4\sqrt{6}$