

Adding, Subtracting, and Multiplying Radical Expressions

In problems 1-2, add or subtract as indicated. Assume all variables are greater than or equal to zero.

1. $7\sqrt{3} + 5\sqrt{3}$	2. $4\sqrt{x} - \sqrt{x} + 3\sqrt{x}$
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In problems 3-8, add or subtract as indicated. Assume all variables are greater than or equal to zero.

3. $\sqrt{32} + \sqrt{8}$	4. $\sqrt[3]{24} + \sqrt[3]{375}$
5. $6\sqrt{54} + 5\sqrt{24}$	6. $\sqrt{18x^2} + 5x\sqrt{2} - 7\sqrt{50x^2}$
7. $\sqrt{16x-32} + \sqrt{9x-18}$	8. $\sqrt[5]{32x^{18}} - \sqrt[5]{x^3}$

In problems 9-16, multiply and simplify. Assume all variables are greater than or equal to zero.

9. $\sqrt{2}(\sqrt{5} - \sqrt{3})$	10. $\sqrt{3x}(\sqrt{5x} - \sqrt{4x})$
11. $(4 + \sqrt{3})(1 - \sqrt{5})$	12. $(\sqrt{7} + 3\sqrt{5})(\sqrt{6} - 2\sqrt{5})$
13. $(2 + \sqrt{x})^2$	14. $(\sqrt{x} + \sqrt{3})^2$
15. $(\sqrt{x} - \sqrt{3})(\sqrt{x} + \sqrt{3})$	16. $(\sqrt[3]{x} - 6)(\sqrt[3]{x} + 2)$