

Adding, Subtracting, and
Multiplying Radical Expressions

1. Add or subtract as indicated.
Assume all variables are greater
than or equal to zero

$$9\sqrt[3]{x} - 4\sqrt[3]{x}$$

2. Add or subtract as indicated.
Assume all variables are greater
than or equal to zero

$$3\sqrt{5} + 2\sqrt[4]{5} + 6\sqrt{5} - 8\sqrt[4]{5}$$

3. Add or subtract as indicated.
Assume all variables are greater
than or equal to zero

$$\sqrt[3]{16} - 6\sqrt[3]{2}$$

4. Add or subtract as indicated.
Assume all variables are greater
than or equal to zero

$$7\sqrt{45x^5} + 3x^2\sqrt{20x}$$

5. Add or subtract as indicated.
Assume all variables are greater
than or equal to zero

$$4\sqrt[3]{-7x^3} + 6x\sqrt[3]{189} + \sqrt[3]{56}$$

6. Add or subtract as indicated.
Assume all variables are greater
than or equal to zero

$$\sqrt{4x-4} - \sqrt{16x-16}$$

7. Add or subtract as indicated.
Assume all variables are greater
than or equal to zero

$$\sqrt[5]{32x^2} + \sqrt[10]{x^4}$$

8. Multiply and simplify. Assume all
variables are greater than or equal
to zero

$$\sqrt{3}(\sqrt{7} - 4\sqrt{15})$$

9. Multiply and simplify. Assume all
variables are greater than or equal
to zero

$$\sqrt{2x}(7 + \sqrt{40x})$$

10. Multiply and simplify. Assume
all variables are greater than or
equal to zero

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

11. Multiply and simplify. Assume
all variables are greater than or
equal to zero

$$(\sqrt{2x} - \sqrt{3})^2$$

12. Multiply and simplify. Assume all variables are greater than or equal to zero

$$(\sqrt{3a} + \sqrt{11b})(\sqrt{3a} - \sqrt{11b})$$

13. Multiply and simplify. Assume all variables are greater than or equal to zero

$$(\sqrt[4]{27p} - 2)(\sqrt[4]{27p} + 5)$$