

6.5 Operations with Radical Expressions
Honors Algebra 2

1. Simplify:

a. $\sqrt{32x^8}$

e. $\sqrt{36ab^4c^5}$

b. $\sqrt[4]{16a^{24}b^{13}}$

f. $\frac{\sqrt{x^6}}{\sqrt{y^7}}$

c. $\sqrt{12c^6d^3}$

g. $\sqrt[4]{\frac{6}{5x}}$

d. $\sqrt[3]{27y^{12}z^7}$

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h. $\frac{\sqrt{a^9}}{\sqrt{b^5}}$

j. $\sqrt[4]{\frac{5x}{8y}}$

i. $\sqrt[5]{\frac{3}{4y}}$

2. Simplify:

a. $5\sqrt[3]{-12ab^4} \cdot 3\sqrt[3]{18a^2b^2}$

b. $6\sqrt{8c^3d^5} \cdot 4\sqrt{2cd^3}$

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c. $2\sqrt[4]{8x^3y^2} \cdot 3\sqrt[4]{2x^5y^2}$

d. $3\sqrt[3]{36xy} \cdot 2\sqrt[3]{6x^2y^2}$

3. Simplify:

a. $\sqrt{98} - 2\sqrt{32}$

b. $4\sqrt{8} + 3\sqrt{50}$

c. $5\sqrt{12} + 2\sqrt{27} - \sqrt{128}$

4. Simplify:

a. $(4\sqrt{3} + 5\sqrt{2})(3\sqrt{2} - 6)$

b. $(6\sqrt{3} - 5)(2\sqrt{5} + 4\sqrt{2})$

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c. $(7\sqrt{2} - 3\sqrt{3})(7\sqrt{2} + 3\sqrt{3})$

5. Simplify:

a. $\frac{5}{2+\sqrt{3}}$

b. $\frac{8}{\sqrt{6}-5}$

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c. $\frac{4+\sqrt{2}}{\sqrt{2}-3}$