

**Radicals 4b – Simplifying Rational Exponents
Homework #10**

**Simplify using exponent/radical properties.
Write your answer using a radical, if
necessary. (No Decimals!)**

1. $4^{1/4} \cdot 64^{1/4}$

2. $\frac{70^{1/3}}{14^{1/3}}$

3. $\frac{1}{36^{-1/2}}$

4. $\frac{125^{2/9} \cdot 125^{1/9}}{5^{1/4}}$

5. $(\sqrt[3]{6} \cdot \sqrt[4]{6})^{12}$

6. $\frac{\sqrt{7}}{\sqrt[3]{7}}$

7. $\frac{\sqrt[6]{8} \cdot \sqrt[6]{16}}{\sqrt[6]{2}}$

8. $\sqrt{50}$

9. $3\sqrt[4]{24} \cdot 5\sqrt[4]{2}$

**Simplify. Write your answer in radical form.
Assume all variables are positive.**

10. $\frac{2\sqrt{x} \cdot \sqrt{x^3}}{\sqrt{9x^{10}}}$

11. $\sqrt[4]{64x^5y^8z^{10}}$

12. $\sqrt[5]{32x^5}$

13. $\sqrt[5]{5a^5b^9c^{13}}$

**Simplify. Assume all variables are positive.
Write your answer in exponential form using
only positive exponents.**

14. $x^{1/3} \cdot x^{1/5}$

15. $(y^{\sqrt{2}})^{\sqrt{2}}$

16. $\frac{x^{3/7}}{x^{1/3}}$

17. $\frac{y^{1/2}}{y^{1/3}y^{-1/4}}$

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