

DIRECTIONS: Simplify each expression and write your answers in **exponential form**.

1. $(\sqrt[4]{10})^2$

2. $\sqrt{x^6 y^5}$

3. $\frac{1}{\sqrt[3]{a^{12} b^{-3}}}$

4. $\frac{v^{7/2} w^{3/2}}{v^{-3/2} w^{-3/2}}$

DIRECTIONS: Simplify each expression and write your answers in **radical form**.

5. $27^{4/3}$

6. $-16^{-3/4}$

7. $(6\sqrt{3})(6\sqrt{3})$

8. $(\sqrt[4]{3})(\sqrt[4]{9})$

9. $\frac{2^{\sqrt{3}+5}}{32}$

10. $(6\sqrt{2})^{\sqrt{7}}$

11. $\sqrt[3]{\frac{b^5}{c^4}}$

12. $\sqrt[8]{m} * \sqrt{m} \div \sqrt[4]{m}$

DIRECTIONS: Solve the equations for the variables that appear in them.

13. $3x^{3/4} = 81$

14. $(2x + 1)^{3/2} = 125$

15. $16^{x-3} = 2^{x+3}$