

Homework: Radicals & Rational Exponents

Name: _____

Date: _____

Write each expression in radical form.

1. $y^{\frac{1}{2}}$

2. $9^{\frac{2}{3}}$

3. $p^{\frac{1}{3}}$

4. $21^{\frac{3}{5}}$

5. $x^{\frac{2}{3}} = \sqrt[3]{x^2}$

6. $m^{\frac{1}{4}}$

Write each expression in exponential form.

7. $(\sqrt{w})^7 = w^{\frac{7}{2}}$

8. $\sqrt[3]{5}$

9. $(\sqrt{a})^3$

10. $(\sqrt[3]{f})^5$

11. $\sqrt[3]{7}$

12. \sqrt{x}

| Radical Form | Exponential Form | Simplified Exponential Form |
|---------------------------|---|-----------------------------|
| 13. $\sqrt[3]{64x}$ | 64x $64^{\frac{1}{3}} x^{\frac{1}{3}}$ | $4x^{\frac{1}{3}}$ |
| 14. $\sqrt{81x^5}$ | $81^{\frac{1}{2}} x^{\frac{5}{2}}$ | $9x^{\frac{5}{2}}$ |
| 15. $\sqrt{49m^2n^3}$ | | |
| 16. $\sqrt{16u^6v^3}$ | | |
| 17. $\sqrt[3]{216x^6y^9}$ | | |
| 18. $\sqrt[3]{512b^7}$ | | |