

Math Sheet

Name _____ Score _____ / 12 Teacher _____ Date _____

Radical and Rational Exponents

Assume every variable is positive. Preserve the written numerator and denominator when rewriting; simplify exact perfect powers completely.

Write each expression in exponential form

1. $\sqrt{8 \cdot x}$

2. $\frac{1}{\left(4\sqrt{3 \cdot n}\right)^4}$

3. $\left(5\sqrt{3}\right)^3$

4. $\frac{1}{\left(6\sqrt{2}\right)^6}$

Write each expression in radical form

5. $(11)^{\frac{4}{2}}$

6. $(5 \cdot n)^{\frac{-6}{4}}$

7. $(4 \cdot a)^{\frac{2}{6}}$

8. $(9)^{\frac{-1}{3}}$

Simplify

9. $(256 \cdot m^8)^{\frac{6}{4}}$

10. $(59049)^{\frac{-5}{5}}$

11. $(1000)^{\frac{4}{3}}$

12. $(117649 \cdot a^{18})^{\frac{-2}{6}}$
