

HW Rational exponents

Date _____ Period _____

Write each expression in exponential form.

1) $(\sqrt{v})^3$

2) $(\sqrt[6]{10n})^5$

3) $\frac{1}{(\sqrt[4]{x})^3}$

4) $\frac{1}{(\sqrt[3]{v})^2}$

Simplify.

5) $(64k^6)^{\frac{4}{3}}$

6) $(343m^3)^{\frac{5}{3}}$

7) $(32x^5)^{\frac{3}{5}}$

8) $(9v^4)^{\frac{3}{2}}$

9) $(9b^2)^{\frac{1}{2}}$

10) $(25n^2)^{-\frac{3}{2}}$

Simplify. Your answer should contain only positive exponents.

11) $(y^2 \cdot (2xy^{-3})^{-2})^2$

12) $x^4 y^4 \cdot (2x^4)^4$

13) $\left(\frac{(2a^2)^3}{2a^4 b^{-4}}\right)^2$

14) $\frac{2x^3 y^4}{(2y^{-1})^{-1}}$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

$$15) x^{\frac{3}{2}} \cdot 4x^{\frac{1}{2}}$$

$$16) 2rr^{\frac{5}{4}}$$

$$17) (m^{-3})^{\frac{2}{3}}$$

$$18) (k^2)^{\frac{3}{2}}$$

$$19) \frac{3n^2}{3n^{\frac{1}{2}}}$$

$$20) \frac{4m^2}{2m^{\frac{1}{2}}}$$

$$21) \frac{x^{\frac{1}{2}}}{\left(\frac{5}{x^4}\right)^2}$$

$$22) (n^2)^{-\frac{1}{2}} \cdot n^{\frac{3}{2}}$$

$$23) \frac{2yx^{-2} \cdot 2x^2y^{-\frac{4}{3}}}{4x^{-\frac{1}{4}}y^{-1}}$$

$$24) \frac{4x^2 \cdot 4yx^2}{4x^{-\frac{1}{2}}}$$