Name_____

Exponent and Radical Expressions Worksheet 1

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $2x^3y^{-2} \cdot 2x^5$

2) $5a^4b^{-1} \cdot 3a^{-1}b^5$

3) $\left(ba^{-5}\right)^2$

4) $\left(3x^{-2}y^4\right)^{-2}$

5) $\dfrac{x^4y^{-3}}{4x^{-1}y^3}$

6) $\dfrac{u^4v^{-1}}{2u^5v^2}$

7) $\left(\dfrac{2x^{-3}y^2 \cdot x^{-2}y^2}{xy^{-3}}\right)^3$

8) $\dfrac{\left(2a^2b^{-2} \cdot 3b^{-2}\right)^{-2}}{ab^2 \cdot 2ba^3}$

Write each expression in exponential form.

9) $\left(\sqrt[3]{p}\right)^5$

10) $\left(\sqrt[6]{10x}\right)^7$

Write each expression in radical form.

11) $(4m)^{\frac{5}{3}}$

12) $n^{\frac{5}{6}}$

Simplify.

13) $\sqrt[3]{-56x^8y^8}$

14) $\sqrt[3]{375u^7v^8}$

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

15) $3n^{-\frac{1}{2}} \cdot 3n$

16) $2b^{-\frac{1}{4}} \cdot 3b^{-\frac{3}{2}}$

17) $\left(v^{-1}\right)^{\frac{3}{2}}$

18) $\left(x^{-\frac{1}{2}}\right)^{\frac{1}{4}}$