

2.2a Exponent Properties

Date _____ Period _____

Simplify.

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

2) $3x^{\frac{2}{3}} \cdot 2x^{\frac{5}{4}}$

3) $2a \cdot 3a \cdot a^{\frac{5}{3}}$

4) $\left(\frac{4}{3}\right)^{\frac{5}{3}}$

5) $\left(a^{\frac{2}{3}}\right)^{\frac{1}{3}}$

6) $\left(n^{\frac{1}{4}}\right)^{\frac{3}{4}}$

Simplify. Your answer should contain only positive exponents.

7) $\frac{2v^{\frac{3}{2}}}{2v^{\frac{3}{2}}}$

8) $\frac{4k^2}{2k^{\frac{1}{4}}}$

9) $\frac{x^2}{2x^{\frac{1}{4}}}$

Simplify.

$$10) x^{\frac{2}{3}} \cdot \left(xx^{\frac{2}{3}} \right)^{\frac{1}{2}}$$

$$11) x^{\frac{7}{4}} x^{\frac{3}{2}}$$

Simplify. Your answer should contain only positive exponents.

$$12) \left(\frac{n}{n^2 \cdot n} \right)^2$$

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

Simplify.

$$14) 4n^4 \cdot 2n \cdot 2n$$

$$15) 2r \cdot r$$

$$16) \left(\frac{5}{p^4} \right)^{\frac{1}{2}} \cdot \left(\frac{1}{p^3} \right)^{\frac{1}{2}}$$

$$17) n^{\frac{3}{2}} \cdot \left(\frac{3}{n^2} \right)^{\frac{1}{2}}$$

Simplify. Your answer should contain only positive exponents.

$$18) \frac{x^{\frac{4}{3}} x^{\frac{4}{3}}}{(x^2)^2}$$

$$19) \frac{\left(\frac{1}{a^2} \right)^3}{a^2 \cdot a}$$