

## Assignment

Date \_\_\_\_\_ Period \_\_\_\_\_

**Simplify. Your answer should contain only positive exponents.**

1)  $4mn \cdot 2mn^2$

2)  $3xy \cdot 3yx^3$

**Simplify.**

3)  $(64x^6)^{\frac{1}{2}}$

4)  $(10000b^{12})^{\frac{5}{4}}$

5)  $(r^6)^{\frac{1}{2}}$

6)  $(r^8)^{\frac{3}{2}}$

7)  $(81x^4)^{\frac{5}{4}}$

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

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

**Write each expression in exponential form.**

10)  $(\sqrt[4]{10v})^3$

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

12)  $\sqrt[5]{3x}$

13)  $(\sqrt[3]{4k})^5$

14)  $(\sqrt[6]{r})^7$

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

15)  $\frac{4xy^{\frac{1}{3}} \cdot 2yx^{\frac{-3}{2}}}{4x^{\frac{4}{3}}y^{\frac{5}{4}}}$

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

$$17) \frac{x^{\frac{4}{3}} \cdot 4x^{-\frac{2}{3}}}{3x^{\frac{1}{3}}y^{\frac{1}{2}}}$$

$$18) \frac{2x^{-\frac{5}{3}}y^{-1}}{4x^{\frac{3}{4}}y^{\frac{2}{3}} \cdot 4xy^{-1} \cdot 3x^{-\frac{4}{3}}y^{\frac{1}{4}}}$$

$$19) \frac{3y}{2x^{-\frac{3}{2}} \cdot 4x^{-\frac{1}{3}}y^{\frac{5}{3}}}$$

$$20) \frac{4x^{\frac{3}{4}}y^{\frac{5}{3}} \cdot 3x^{\frac{3}{2}}y^2}{2x^{-1}y^{-1}}$$

**Write each expression in radical form.**

$$21) (6x)^{\frac{2}{3}}$$

$$22) (6x)^{\frac{4}{3}}$$

$$23) m^{\frac{1}{2}}$$

$$24) p^{-\frac{3}{2}}$$

$$25) (10v)^{\frac{6}{5}}$$

## Assignment

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**Simplify. Your answer should contain only positive exponents.**

1)  $4mn \cdot 2mn^2$   
 $8m^2n^3$

2)  $3xy \cdot 3yx^3$   
 $9x^4y^2$

**Simplify.**

3)  $(64x^6)^{\frac{1}{2}}$   
 $8x^3$

4)  $(10000b^{12})^{\frac{5}{4}}$   
 $100000b^{15}$

5)  $(r^6)^{\frac{1}{2}}$   
 $r^3$

6)  $(r^8)^{\frac{3}{2}}$   
 $r^{12}$

7)  $(81x^4)^{\frac{5}{4}}$   
 $243x^5$

8)  $(n^4)^{\frac{3}{2}}$   
 $n^6$

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

**Write each expression in exponential form.**

10)  $(\sqrt[4]{10v})^3$   
 $(10v)^{\frac{3}{4}}$

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

12)  $\sqrt[5]{3x}$   
 $(3x)^{\frac{1}{5}}$

13)  $(\sqrt[3]{4k})^5$   
 $(4k)^{\frac{5}{3}}$

14)  $(\sqrt[6]{r})^7$   
 $r^{\frac{7}{6}}$

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

15)  $\frac{4xy^{\frac{1}{3}} \cdot 2yx^{-\frac{3}{2}}}{4x^{\frac{4}{3}}y^{\frac{5}{4}}} \cdot \frac{2x^{\frac{1}{6}}y^{\frac{1}{12}}}{x^2}$

16)  $\frac{3ab^{\frac{3}{4}}}{3a^{-\frac{1}{2}}b^2 \cdot 2b^{-\frac{5}{3}}} \cdot \frac{a^{\frac{3}{2}}b^{\frac{23}{12}}}{2}$

$$17) \frac{x^{\frac{4}{3}} \cdot 4x^{-\frac{2}{3}}}{3x^{\frac{1}{3}}y^{\frac{1}{2}}} \frac{4x^{\frac{1}{3}}y^{\frac{1}{2}}}{3y}$$

$$18) \frac{2x^{-\frac{5}{3}}y^{-1}}{4x^{\frac{3}{4}}y^{\frac{2}{3}} \cdot 4xy^{-1} \cdot 3x^{-\frac{4}{3}}y^{\frac{1}{4}}} \frac{x^{\frac{11}{12}}y^{\frac{1}{12}}}{24x^3y}$$

$$19) \frac{3y}{2x^{-\frac{3}{2}} \cdot 4x^{-\frac{1}{3}}y^{\frac{5}{3}}} \frac{3y^{\frac{1}{3}}x^{\frac{11}{6}}}{8y}$$

$$20) \frac{4x^{\frac{3}{4}}y^{\frac{5}{3}} \cdot 3x^{\frac{3}{2}}y^2}{2x^{-1}y^{-1}} 6x^{\frac{13}{4}}y^{\frac{14}{3}}$$

Write each expression in radical form.

$$21) (6x)^{\frac{2}{3}} \\ (\sqrt[3]{6x})^2$$

$$22) (6x)^{\frac{4}{3}} \\ (\sqrt[3]{6x})^4$$

$$23) m^{\frac{1}{2}} \\ \sqrt{m}$$

$$24) p^{-\frac{3}{2}} \frac{1}{(\sqrt{p})^3}$$

$$25) (10v)^{\frac{6}{5}} \\ (\sqrt[5]{10v})^6$$