

unit 4 Assignment

Date _____ Period _____

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Simplify. Your answer should contain only positive exponents.

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

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

3)
$$\frac{(yx^2)^{-1} \cdot 2x^{-4} y^0}{-2x^{-4} y^3}$$

4)
$$-\frac{ab^{-2} \cdot 2a^3 b^2}{(2a^{-3} b^{-3})^4}$$

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

6)
$$\left(\frac{xy^2 \cdot yx^0 \cdot 2x^{-1} y^0}{-2y^3} \right)^4$$

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

$$7) \frac{\left(x^{\frac{4}{3}} y^{\frac{1}{2}} \cdot x^{\frac{4}{3}} y^2\right)^{\frac{1}{2}}}{y^{\frac{3}{4}}}$$

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

$$9) \frac{u^{\frac{2}{3}} v^4 \cdot u^{-\frac{5}{4}} v^0}{\left(u^{\frac{1}{2}} v^{\frac{3}{4}}\right)^4}$$

$$10) \frac{x^0 y^{-1}}{\left(x^{-\frac{5}{4}}\right)^3 \cdot x^{\frac{3}{4}} y^{-\frac{1}{3}}}$$

$$11) \frac{\left(uv^{\frac{3}{2}}\right)^{\frac{1}{3}}}{u^{\frac{1}{2}} v^{\frac{1}{2}} \cdot vu^{\frac{5}{4}}}$$

$$12) \frac{ba^2}{a^{\frac{3}{4}} b^{\frac{5}{3}} \cdot (a^2)^{\frac{1}{2}}}$$

Write each expression in exponential form.

13) $\frac{1}{(\sqrt[3]{5b})^2}$

14) $(\sqrt[5]{b})^6$

15) $(\sqrt{5n})^5$

16) $(\sqrt[3]{6x})^5$

Write each expression in radical form.

17) $(6a)^{-0.5}$

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

19) $(2m)^{-\frac{2}{5}}$

20) $(10a)^{2.5}$

Simplify.

21) $(216r^9)^{-\frac{2}{3}}$

22) $(16x^4)^{\frac{1}{4}}$

23) $(343a^3)^{-\frac{5}{3}}$

24) $(243x^{15})^{\frac{4}{5}}$

25) $(32n^{15})^{\frac{1}{5}}$

26) $\sqrt{245}$

27) $\sqrt[4]{324}$

28) $\sqrt[3]{135}$

29) $\sqrt[3]{256}$

30) $\sqrt[5]{256}$

Answers to unit 4 Assignment (ID: 1)

$$1) -\frac{x^{11}}{y^{15}}$$

$$5) x^7 y^{11}$$

$$9) \frac{u^{\frac{11}{24}} v^{\frac{49}{16}}}{u^3}$$

$$13) (5b)^{-\frac{2}{3}}$$

$$17) \frac{1}{\sqrt{6a}}$$

$$21) \frac{1}{36r^6}$$

$$25) 2n^3$$

$$29) 4\sqrt[3]{4}$$

$$2) -\frac{b^9 a^2}{4}$$

$$6) 1$$

$$10) \frac{x^{\frac{11}{12}} y^{\frac{1}{3}}}{y}$$

$$14) b^{\frac{6}{5}}$$

$$18) (\sqrt[3]{3n})^2$$

$$22) 2x$$

$$26) 7\sqrt{5}$$

$$30) 2\sqrt[5]{8}$$

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

$$7) y^{\frac{1}{2}} x^{\frac{4}{3}}$$

$$11) \frac{u^{\frac{7}{12}}}{u^2 v}$$

$$15) (5n)^{\frac{5}{2}}$$

$$19) \frac{1}{(\sqrt[5]{2m})^2}$$

$$23) \frac{1}{16807a^5}$$

$$27) 3\sqrt[4]{4}$$

$$4) -\frac{a^{16} b^{12}}{8}$$

$$8) \frac{y^{\frac{1}{12}} x^{\frac{1}{2}}}{x^4}$$

$$12) \frac{b^{\frac{1}{3}} a^{\frac{1}{4}}}{b}$$

$$16) (6x)^{\frac{5}{3}}$$

$$20) (\sqrt{10a})^5$$

$$24) 81x^{12}$$

$$28) 3\sqrt[3]{5}$$