Write in exponential form: This is Exponential Form: $a^{\frac{6}{7}}$

a. $\sqrt[3]{G^5}$ $G^{\frac{5}{3}}$

b. $\sqrt[6]{R}$ $R^{\frac{1}{6}}$

c. $\sqrt{B^7}$ $B^{\frac{7}{2}}$

d. $5\sqrt[3]{G}$ $5G^{\frac{1}{3}}$

e. $\sqrt[4]{3K}$ $(3K)^{\frac{1}{4}}$

f. $\sqrt[4]{2a^3b^5}$ $(2a^3b^5)^{1/4}$ OR $2^{1/4}a^{3/4}b^{5/4}$

You can now finish Hwk #13 Sec 7-4

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Problems 7, 8, 11, 12, 14, 17, 19, 21, 22, 25

Due tomorrow

Simplify. No exponents should be left as zero or negative.

1. $(-8w^{-12})^{\frac{1}{3}}$

$= \left(\frac{-8^1}{w^{12}}\right)^{1/3} = \frac{-8^{1/3}}{w^4} = \frac{\sqrt[3]{-8}}{w^4} = \frac{-2}{w^4}$

2. $\left(\frac{m^6p^{-3}}{p^1}\right)^{-\frac{1}{2}}$

$= \left(\frac{m^6}{p^4}\right)^{-1/2} = \left(\frac{p^4}{m^6}\right)^{1/2} = \frac{p^2}{m^3}$

Simplify. No exponents should be left as zero or negative.

$(g^{-\frac{5}{6}}h^{\frac{1}{4}})^{-12} = g^{-\frac{5}{6}\cdot -12} \cdot h^{\frac{1}{4}\cdot -12}$

$\frac{g^{10}}{h^{3}}$

Simplify.

$\sqrt[5]{7} \cdot \sqrt[5]{3} = \sqrt[5]{7\cdot 3} = \sqrt[5]{21}$

When you multiply two radicals with the same index you can write it as one radical with the product of the two radicands.

$\sqrt[3]{Q^2} \cdot \sqrt[2]{Q^5} = Q^{\frac{2}{3}} \cdot Q^{\frac{5}{2}} = Q^{\frac{2}{3}+\frac{5}{2}}$

$Q^{\frac{4}{6}+\frac{15}{6}}$

$Q^{\frac{19}{6}}$

Different indecies means you can't do it the same way as the previous problem. Change each into exponential form and add exponents since they have the same base.

Simplify.

$A^{\frac{3}{4}} \div A^{\frac{1}{6}} = A^{\frac{3}{4}-\frac{1}{6}} = A^{\frac{9}{12}-\frac{2}{12}}$

$A^{7/12}$

Simplify without using a calculator.

a. $27^{\frac{2}{3}} =$

$(\sqrt[3]{27})^2$ or $\sqrt[3]{27^2}$

this way would require a calculator.

$(3)^2 = 9$

b. $6^{\frac{3}{2}} =$

$\sqrt{6^3}$ or $(\sqrt{6})^3$

$\sqrt{6\cdot 6\cdot 6}$

$\sqrt{6^2\cdot 6}$

$6\sqrt{6}$

$\sqrt{6}\cdot\sqrt{6}\cdot\sqrt{6}$

$6\sqrt{6}$