Simplify each without a calculator. Give answer without exponents that are negative or decimals.

1. $(-64)^{-\frac{2}{3}} = \left(\sqrt[3]{-64}\right)^{-2} = (-4)^{-2} = \frac{1}{(-4)^2} = \frac{1}{16}$

2. $\left(m^{\frac{7}{6}} n^{-12}\right)^{\frac{4}{3}} = m^{\frac{7}{6}\cdot\frac{4}{3}} \cdot n^{-12\cdot\frac{4}{3}} = \frac{m^{14/9}}{n^{16}}$

The radical symbol $\sqrt{\ }$ indicates the Principal Root.

Positive if there are two roots

DEFINITELY POSITIVE:

$\sqrt[\text{even}]{\ }$ x^{even}

COULD BE POS OR NEG:

$\sqrt[\text{odd}]{\ }$ x^{odd}

Absolute Value symbols are needed when

Taking Even Roots whose answers have Odd Exponents.

Simplify each. Use absolute value symbols when needed.

1. $\sqrt[3]{16j^7k^{14}}$

$\sqrt[3]{8 \cdot 2} \quad \sqrt[3]{j^6 \cdot j^1}$

$\sqrt[3]{k^{12} \cdot k^2}$

$2j^2k^4\sqrt[3]{2jk^2}$

2. $\sqrt[3]{12p^{10}q^9}$

$4 \cdot 3$

$2|p^5|q^6\sqrt[3]{3q}$

3. $\sqrt[8]{x^{40}y^{21}z^{15}}$

$|x^5|y^2|z|\sqrt[8]{y^5z^7}$

4. $\sqrt[9]{k^{41}j^{29}}$

$k^4j^3\sqrt[9]{k^5j^2}$

Simplify. Assume all variables are positive.

$\sqrt[4]{m^{12}n^{23}p^6}$ THIS MEANS NO ABSOLUTE VALUE SYMBOLS

Hwk #2:

Sec 7-1

Pages 372-373

Problems: 23, 27, 43 - 45, 50

Sec 7-2. Multiplying and Dividing Radical Expressions

Simplify each.

1. $\sqrt{12} \cdot \sqrt{18}$

$\sqrt{216}$

$\sqrt{36 \cdot 6}$

$6\sqrt{6}$

or

$\sqrt{12} \cdot \sqrt{18}$

$\sqrt{4 \cdot 3} \quad \sqrt{9 \cdot 2}$

$2\sqrt{3} \cdot 3\sqrt{2}$

$6\sqrt{6}$