

Quiz Corrections

1) a) b^{-5}

$\frac{1}{b^5}$

b) $4^{-4} = \frac{1}{4^4} = \frac{1}{256}$
(4 · 4 · 4 · 4)

c) $\frac{y^3}{y^5}$

$y^{3-5} = y^{-2} = \frac{1}{y^2}$

d) $\left(\frac{a^2}{a^3}\right)^{-3}$

a^{2-3}

$(a^5)^{-3}$

$a^{-15} = \frac{1}{a^{15}}$

2d)

$\frac{(d^4 f^3)^{-2}}{d^{-3} e^6 f^4}$

$\frac{d^{-8} f^{-6}}{d^{-3} e^6 f^4}$

$\frac{d^{-8}}{d^{-3}} \cdot \frac{1}{e^6} \cdot \frac{f^{-6}}{f^4}$

$\frac{d^{-5}}{1} \cdot \frac{1}{e^6} \cdot \frac{f^{-10}}{1}$

$= \frac{1}{d^5 e^6 f^{10}}$

$\frac{1}{x^{-2}} = x^2$

$\frac{x^{-2}}{1} = \frac{1}{x^2}$

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

$= \left(\frac{3}{2^3}\right)^2$

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

$= \frac{9}{64}$

b) $\left(\frac{15}{3}\right)^4 = 5^4 = 625$

Ch 2 - Review

Feb 29

Geometric Models

$$5^2 = \boxed{A=25} \underset{5}{\text{Area}}$$

$$9^3 \quad \text{Volume} \quad \begin{array}{c} \text{V=729} \\ \text{9} \end{array}$$

* Add $\sqrt{\quad}$ to model

A box has volume 525 cm^3 , what are dimensions
Cube / $\sqrt[3]{\quad}$

$$\sqrt[3]{525} = 8.07 \text{ cm} \quad (8.07)^3 = 525$$

Powers w neg. bases:

$$(-2)^3 = -2 \cdot -2 \cdot -2 = -8 \quad \begin{array}{l} \text{odd exponent} \\ = (-) \end{array}$$

↑ repeats ()

$$(-2)^4 = -2 \cdot -2 \cdot -2 \cdot -2 = 16 \quad \begin{array}{l} \text{even exponent} \\ = (+) \end{array}$$

↑

$$-2^4 = -2 \cdot 2 \cdot 2 \cdot 2 = -16$$

↑ does not repeat!

Powers w fraction bases

$$\left(\frac{a}{b}\right)^2 = \frac{a^2}{b^2}$$

1-4 Review pkg.

Changing Bases:

$$27 = 3^3$$

3 3 3

$$64 = 8^2 = 4^3 = 2^6$$

2x2 4 2 4 2 4 2 2 2 2 2 2

Simplify to a single power.

$$(64^3) (8)^4 (2)^3 =$$

$$(2^6)^3 \cdot (2^3)^4 \cdot 2^3$$

same base

$$2^{18} \cdot 2^{12} \cdot 2^3$$

product of powers

$$\boxed{2^{33}}$$

Neg. exponents $\rightarrow$ Reciprocal (flip) of base
Change exponent sign (+/-)

$$a^{-2} = \frac{1}{a^2}$$

$$\left(\frac{a}{b}\right)^{-2} = \left(\frac{b}{a}\right)^2$$

$$\frac{a^2 b^3 c^{-4}}{a^5 b^7 c^{-6}} = \left(\frac{a^{-3}}{1}\right) \left(\frac{b^{-4}}{1}\right) \left(\frac{c^2}{1}\right) = \frac{c^2}{a^3 b^4}$$

$\frac{1}{a^3} \frac{1}{b^4} c^2$

Review Package, Text Review?

