Quiz

Solve for x

$3^{x-2} = 3^4$

Solve for r

$\Pr t = I$

Feb 21-11:33 AM

White Board Review -- Chapter 6--Algebraic models

Evaluate each of the following

4^2 $=16$

-4^2 $=-16$

$(-4)^2$ $=(-4)(-4)=16$

$4^{\frac{1}{2}}$ $=\sqrt{4}=2$

$4^{\frac{3}{2}}$ $=\left(2\sqrt{4}\right)^3$ $=2^3=8$

$(2^{-2})^2$ $=2^{-4}$ $=\frac{1}{2^4}$ $=\frac{1}{16}$ $=0.0625$

OR $\left(\frac{1}{2^2}\right)^2$ $=\frac{1^2}{2^{2\times2}}$ $=\frac{1}{2^4}$ $=\frac{1}{16}$

-3×4^2 $=-3\times16$ $=-48$

Simplify (no negative exponents)

$x^3 \cdot x^{-2} = x$

$\frac{b^5}{b^1} = b^4$

$(4xy^3)^2 = 4^2 x^2 y^{3\times 2} = 16x^2y^6$ ✓

$\left(\frac{ab^{-2}}{ab^{-3}}\right)^2 = \frac{a^2b^{-4}}{a^2b^{-6}} = a^0b^2 = b^2$ $\quad -4-(-6)$

$\left(\frac{qr^2}{q}\right)^0 = 1$

$\frac{s^{-3}t^{-3}}{s^{-2}t^5} = s^{-3-(-2)}t^{-3-5} = s^{-1}t^{-8} = \frac{1}{s^1t^8}$

$\frac{2a^2b^3 \times (3ab)^2}{9a^2b} = \frac{2a^2b^3 \times 9a^2b^2}{9a^2b}$

$= \frac{18a^4b^5}{9a^2b} = 2a^2b^4$

$\frac{2hi^2 \times -4h}{2h^4} = \frac{-8h^2i^2}{2h^4}$ ✓

$= -4h^{-2}i^2$ ✓

$= \frac{-4i^2}{h^2}$ ✓

Sep 20-10:41 PM

Write Each as a radical and then evaluate.

$27^{\frac{1}{3}}$

$= (\sqrt[3]{27})^1$

$= 3$

$(-27)^{\frac{2}{3}}$

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

$= (-3)^2$

$= 9$

Write each with a rational exponents.

$(\sqrt[3]{64})^1$

$= 64^{\frac{1}{2}}$

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

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

$(\sqrt{25})^{-3}$

$= 25^{-\frac{3}{2}}$

$= \frac{1}{25^{\frac{3}{2}}}$

Sep 20-10:54 PM

Solve each equation for the indicated variable. (Isolate the indicated variable)

$y = mx + b$, for b $y - mx = b$

$A = \frac{1}{2}bh$, for h $2A = bh$ $\frac{2A}{b} = h$

$h = \frac{2r^2}{t}$, for r $ht = 2r^2$ $\frac{ht}{2} = r^2$ $\sqrt{\frac{ht}{2}} = r$

Sep 20-11:04 PM

Word Problems:

Computer power has been doubling approximately every 2 years as more and smaller transistors have been integratee to build better computer chips. The number of transistors, T, in a chip has increased according to $T = 4600(1.4)^n$,

Where n is the number of years since 1974. Determine the number of transistors in a computer chip in 1984.

$T = 4600(1.4)^{10}$

The formula for simple interest is I=Prt, Where I is the amount of interest after the Principal, P, has been invested at an interest rate, r, for a specific number of years, t.

a. Determine the amount of interest if $3000 is invested at 5%/year for 4 years?

$I = Prt$

$I = 3000(0.05)(4)$

b. Determine the interest rate if $300 interest was made after $2000 had been invested for 5 years?

$300 = 2000r(5)$

$300 = 10000r$

$\frac{300}{10000} = r$

$0.03 = r$

3% is the rate.

Solve each of the following Exponential Equations

a) $2^5 = 2^x$

$5 = x$

b) $3^5 = 9^{x-3}$

$3^5 = (3^2)^{x-3}$

$3^5 = 3^{2x-6}$

$5 = 2x - 6$

c) $27^{x-1} = 9^{2x+3}$

$(3^3)^{x-1} = (3^2)^{2x+3}$

$3^{3x-3} = 3^{4x+6}$

$3x - 3 = 4x + 6$

$-3 - 6 = 4x - 3x$

$-9 = x$

d) $103 = 5^x$

$5^{2.8} = 90.5$

$5^{2.9} = 106$

$\therefore x \doteq 2.9$

$3^{-3} = 2^x$

$0.037 = 2^x$

$2^{-3} = 0.125$

$2^{-5} = 0.031$

$2^{-6} = 0.015$

$\therefore x \doteq -5$

p. 400

#1-3, 7-13, 15, 19, 21, 23-24

BONUS 2% for Test

Sep 28-9:04 AM