

*Activity- Math Lib

* "Where would you find a prehistoric cow?" ws

 $1 \text{ og } 3^{\text{b}} + 2 \text{ log } x^{\text{c}} + 4 \text{ log } 3^{\text{c}} +$ 10936.x2.3 109318x2

*What does it mean to be a solution?

*Why do extraneous solutions exist?

*What are the appropriate operations to solving exponential & logarithmic equations?

*What does it mean to be a solution?

*Why do extraneous solutions exist?

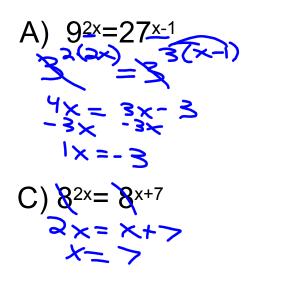
Property of Equality for Exponential Equations

*If b is a positive number other than 1, then $b^x=b^y$ if and only if x=y.

Example:

If $3^{x}=3^{5}$, then x=5. If x=5, then $3^{x}=3^{5}$.

Examples:



B)
$$3^{-3x+1}=3^{x-9}$$

 $3^{-3x+1}=3^{x-9}$
 $-3^{x+1}=3^{x-9}$
 $-3^{x+1}=-10^{x-1}$
 $x=5^{x}$
D) $8^{x-1}=(1/2)^{2x-1}$
 $(\frac{1}{2})^{x}=-\frac{1}{3}^{x}-\frac{1}{3}^{x}$
 $-3^{x}+3=-3^{x}-\frac{1}{3}^{x}$
 $-5^{x}=-4$

How do I solve equations with e?

$$1) e^{x} = 1$$

$$X = \ln(x)$$

$$x = 0$$

$$2) e^{x} + 1 = 7$$

$$1 \ln e^{x} = 1 \ln 6$$

$$X = 1 \ln 6$$

How do I solve equations with In?

1)
$$-2 + \ln 2x = 1$$

 $+2$ $+3$
 $-2 + \ln 2x = 1$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$
 $-2 + 2$

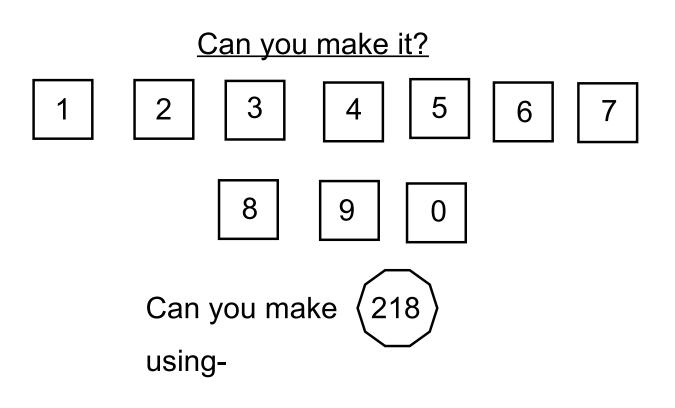
2) In
$$2x \oplus \ln 4x = 2$$

 $\ln 2x + x = 2$
 $e^{\ln(8x^2)} = 2$
 $8x^2 = e^2$
 $5x^2 = e^2$
 $x = e^2$
 $x = e^2$

*Natural Logarithms Equations Maze

<u>Points</u>

- 1 point for each <u>addition</u> used in an equation
- 2 points for each <u>subtraction</u> used in an equation
- 3 points for each <u>multiplication</u> used in an equation
- 4 points for each division used in an equation



Property of Equality for Logarithmic Equations

*If b, x, and y are positive numbers with $b \neq 1$, then $\log_b x = \log_b y$ if and only if x = y.

Example:

If $\log_2 x = \log_2 7$, then x=7.

If x=7, then $\log_2 x = \log_2 7$.

1) $\log_7(2-x) = \log_7 5x$ 2 - x = 5x + x = +x $\frac{2}{5} = 6x$ $\frac{1}{3} = x$

2)
$$2\log_7 (1-2x)=12$$

 $\log_7 (1-2x)=12$
 $\log_7 (1-2x)=6$
 $7^6 = 1-2x$
 $17649 = 1-2x$
 $17649 = 1-2x$
 $17648 = -2x$
 $x = -58824$

3)
$$\log_3 x=5$$
 $(34)^{4}=7$
 $3^{5}=x$ $\log_3 27=y_{x}$ $3^{4}=8^{3}$
 $x=243$ $3^{4}=\frac{4}{3}$ $\frac{4}{3}=\frac{4}{3}$
 $\frac{10927}{1033}=x$ $x=\frac{3}{10}$

* "If you had eight porcupines in on hand and seven porcupines in the other, what would you have?" WS

Homework: ★Page 519#3-42 multiples of 3, 55, 56b &c, 57,

58 ★WS's (finish)

Reminders

*Review packet due and Test on

Red- 18th

Blue- 22nd