

Home: 9th

Date: 4/2

Written on last slide 
parts 1,2,3,6 of logs worksheet

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Bell Work

Directions: Please simplify



1. $\log_2 8$ $2^x = 8$

2. $\log_3 27$

(3)

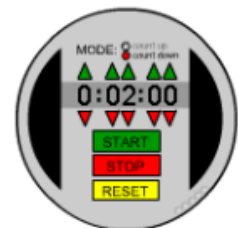
$3^x = 27$

3. $\log_5(1/25)$

4. $\log_6 6$

(-2) $5^x = 1/25$

(1) $6^x = 6$



Pair and Share

Person A.



What are factors?

numbers that
can be mult to
make given
number

Person B.



Person A.



addend/s
polynite

Person B.



Note to Teacher

On the next slide I usually write a few answers on the board randomly, then I delete the gray boxes and ask the kids to categorize their "re-expressions according". I usually then tell them that we are only focussing on the products and the quotients.

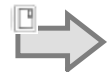
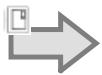
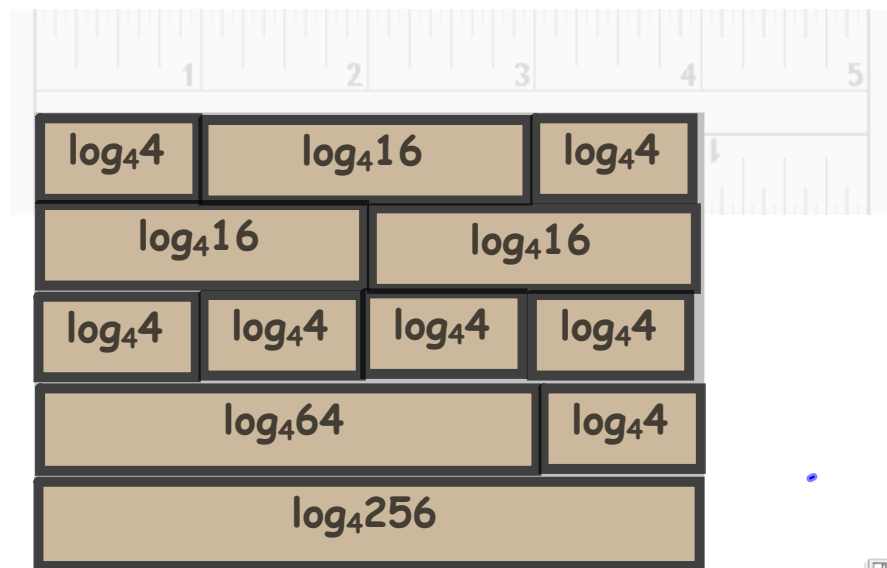
X		Rewrite 1024 as many ways as possible				LJ
		Sum	Difference	Product	Quotient	
2	numbers	$512 + 512$ $1024 + 0$	$1025 - 1$	$4 \cdot 256$ $162 \cdot 4 \cdot 10$ $2 \cdot 512$	$\frac{1024}{2}$ $\frac{2048}{2}$	2^{10} 32^2
3	numbers			$256 \cdot 2 \cdot 2$	$\frac{4 \cdot 512}{2}$	
4	numbers					
+5	numbers					

Please make the wall of the log cabin.

$\log_4 4$

$\log_4 4$

$\log_4 4$

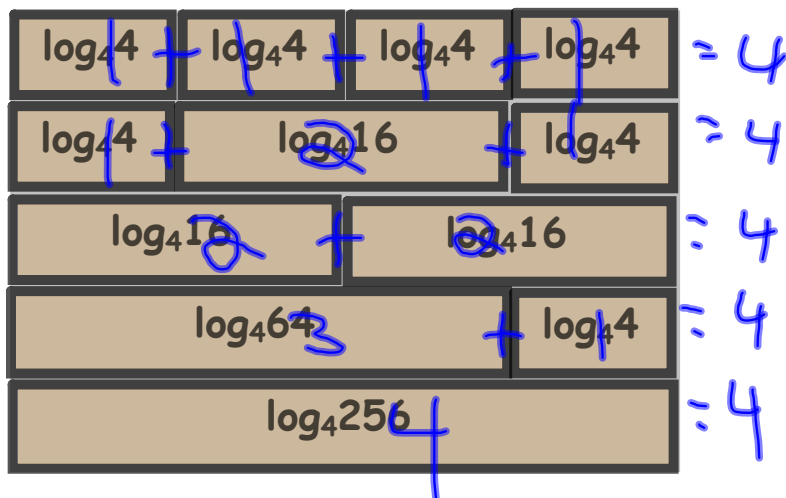


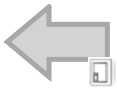
This is the finished wall

$$\log_B(xy) = \log_B x + \log_B y$$

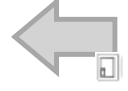


$$\log_4 4^3$$



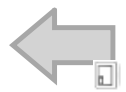
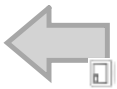


Observations

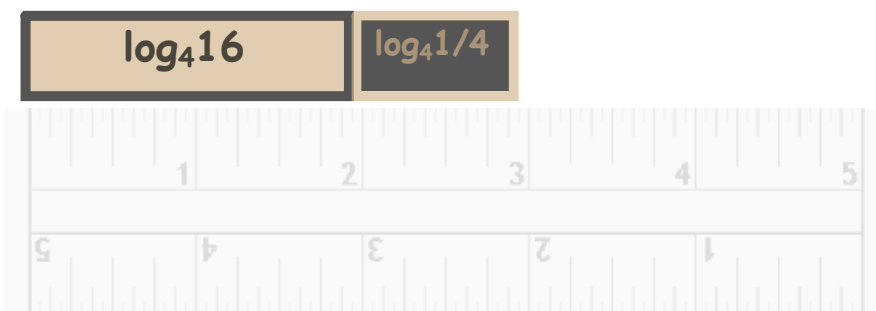


Hint:

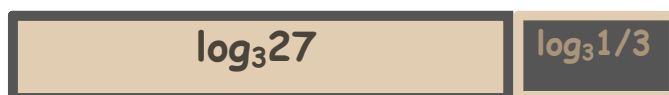
!



1. Is this really 3 inches long? Is it 1 inch long? Sorta?

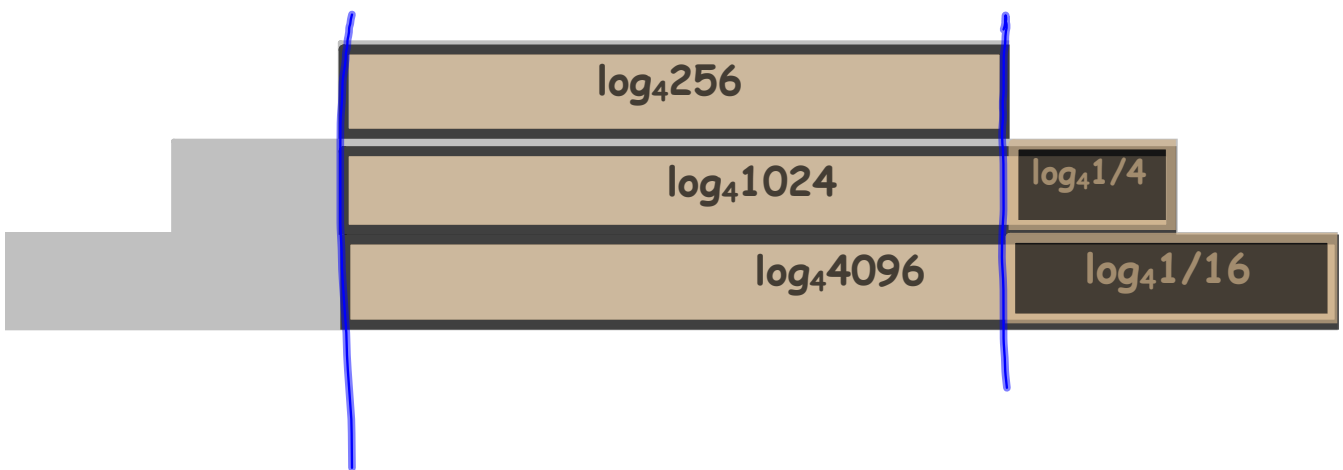


2. Is this really 4 inches long? Is it two inches long? Sorta?



3. Why is the color scheme reversed on the logs that have fractional "to gets?"

Please make the roof of the log cabin.



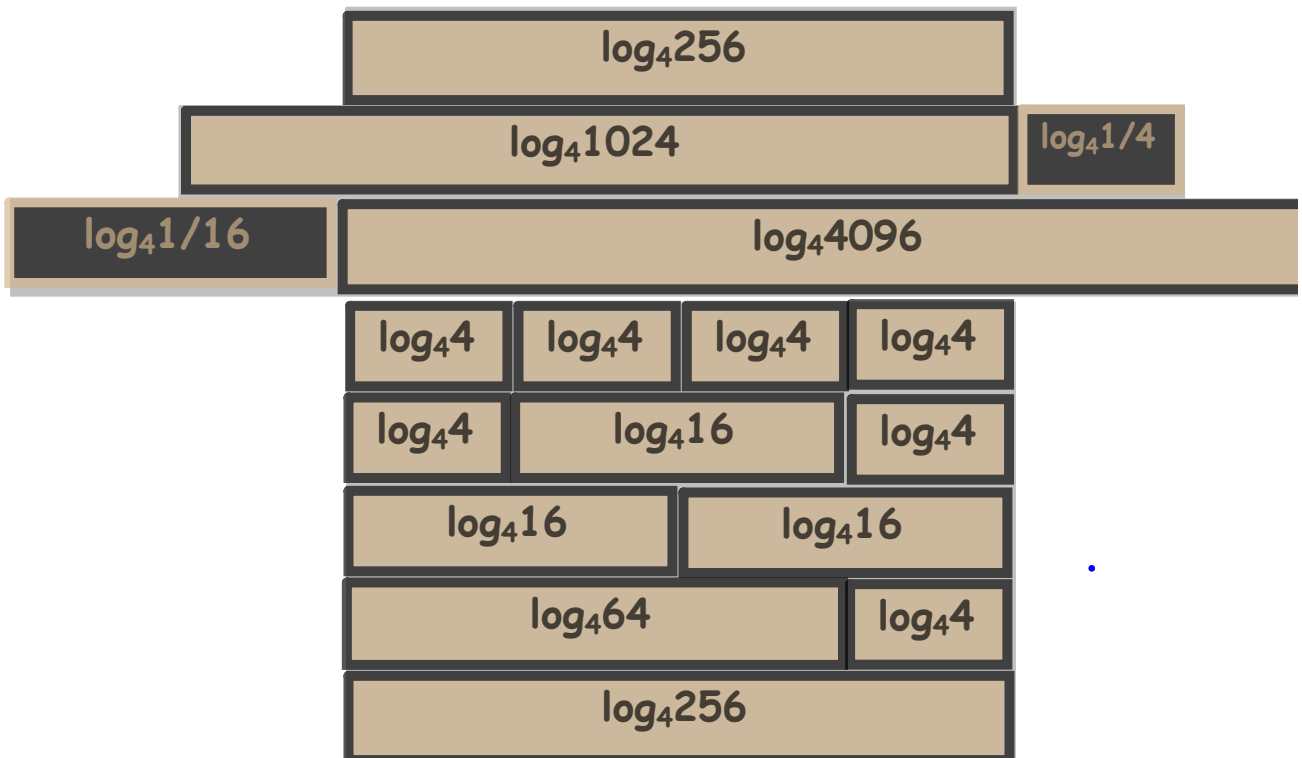
Finished Product

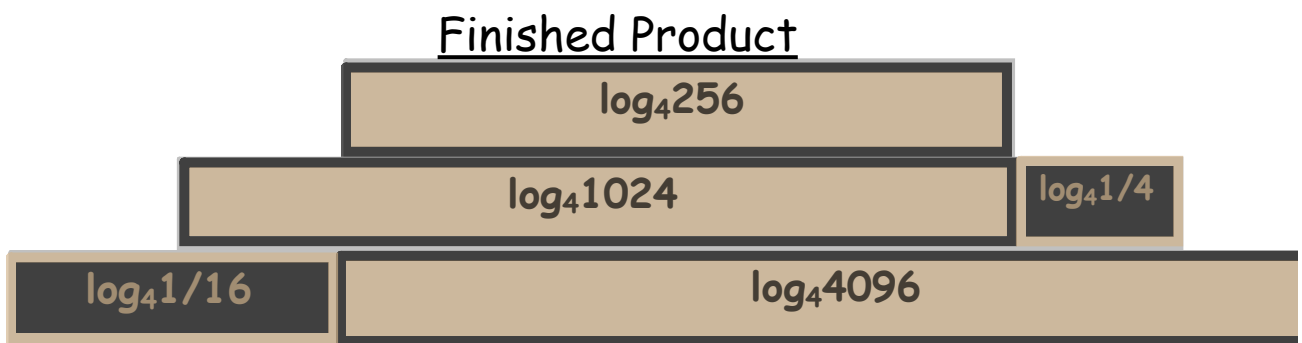


Properties



When all is said and done?





In what other ways might we express multiplying by a fraction and get the same result?

Properties



The Properties of Logs

← $\log_b xy = \log_b x + \log_b y$

← $\log_b \frac{x}{y} = \log_b x - \log_b y$

← $\log_b x^y = y \log_b x$

$x+x+x$
 $3x$

$\log_2 1024$

$\log_6 6^3$ $\log_6^3 + \log_6 6 + \log_6 6$
 $3 \log_6 6$

Homework

Pick a log expression and re-express it enough ways to build a log cabin like we did in class.
Your wall must be 5 log layers high.
The roof must be 2 log layers high.

Hint: The following are good potential picks for the bottom log of your log cabin.

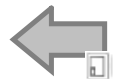
$$\log_2 32$$

$$\log_3 243$$

$$\log_5 3125$$

$$\log_5 625$$

$$\log_4 1024$$



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