## Happy Thursday, January 12th! Homework on Do Now: desk!!

Which of the functions below represents exponential growth? Which represents exponential decay?

$$f(x) = 3\left(\frac{1}{2}\right)^{x}$$

$$f(x) = 5\left(\frac{7}{3}\right)^{x}$$

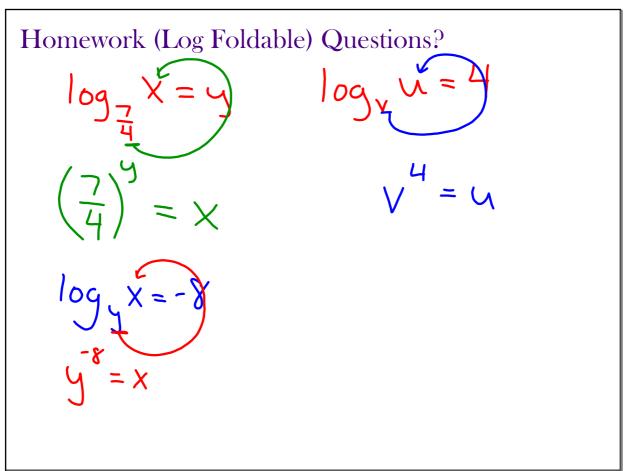
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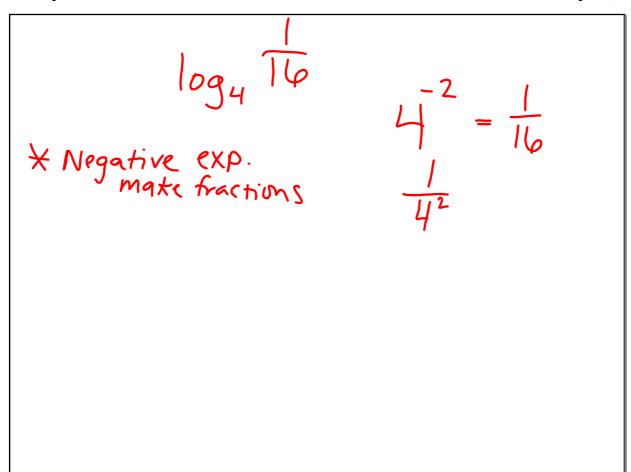
$$f(x) = 3\left(\frac{1}{2$$

Jan 7-6:38 PM



$$|09343|$$
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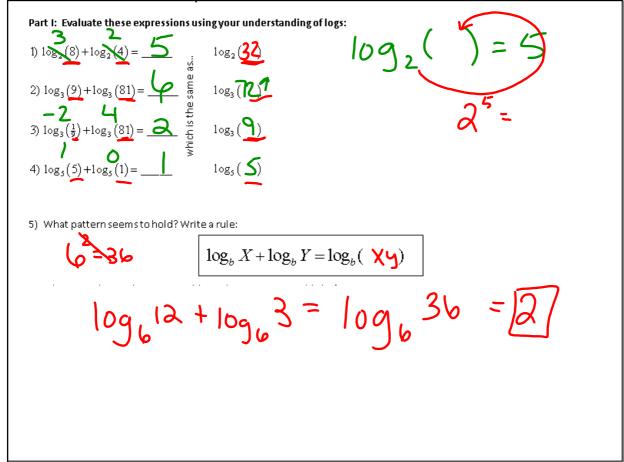
## Today's Agenda:

- Log Properties (Group Work)
- -2 Examples from homework

## Materials Needed:

- Pen/pencil, Calculator, Logs Investigation worksheet

Jan 10-7:30 AM



Part II: Evaluate these expressions using your understanding of logs:

13) What pattern seems to hold? Write a rule:

$$\log_b X - \log_b Y = \log_b \left(\frac{X}{Y}\right)$$

$$\log_b X - \log_b X = \log_b \left(\frac{X}{Y}\right)$$

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21) What pattern seems to hold? Write a rule...

$$\log_{b}(A^{c}) = \text{C.log}_{b}A$$

$$\log_{b}(A^{c}) = \text{C.log}_{b}A$$

$$95 \log_{3}3$$

## Three Rules

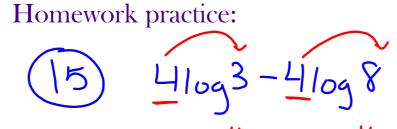
$$\log_b X + \log_b Y = \log_b(XY)$$

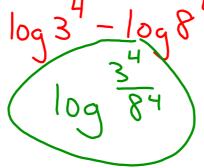
$$\log_b X - \log_b Y = \log_b \left(\frac{X}{Y}\right)$$

$$\log_b(A^c) = c \bullet \log_b A$$

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$$\frac{4}{\log 3}$$
  $\frac{3}{\log 3}$   $\frac{3}$ 





Jan 12-10:06 AM

Homework: Choose 5 MORE problems on the front and 5 MORE problems on the back of the worksheet.

Exit Slip: Condense the expression into one logarithm.

$$\log_7 3 + \log_7 10 + \log_7 8$$