

Warm Up: Pre-Calc

10/8

Rewrite as a log:

1) $10^{-1} = \frac{1}{10}$

2) $10^4 = 10000$

Simplify:

3) $4^7 \cdot 4^8$ 4) $\frac{4^6}{4^2}$

5) $(4^6)^2$

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W.A.L.T.:

Use the product, quotient and power properties of logs.

W.A.S.I.:

We can expand or condense logarithmic expressions using the properties.

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Notes!!! Product Property of Logs

$$\log_b(mn) = \log_b m + \log_b n$$

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In Class Work:

Expand using the properties of logarithms.

$$\left(\frac{38}{-4}\right) \log_{9.2}(zy) = \frac{-38}{4} \log_{9.2} z + \frac{-38}{4} \log_{9.2} y$$

$$2) \log_4(2 \cdot 3 \cdot 10)$$

$$\log_4 2 + \log_4 3 + \log_4 10$$

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In Class Work:

Condense using the properties of logarithms.

$$3) \log a + \log b$$

$$\log(ab)$$

$$4) 2 \log_4 2 + 2 \log_4 4 + 2 \log_4 3$$

$$\log ab$$

$$2 \log_4 2 \cdot 4 \cdot 3$$

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Notes!!! Quotient Property of Logs

$$\log \left(\frac{m}{n} \right) = \log m - \log n$$

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In Class Work:

Expand using the properties of logarithms.

1) $\log \frac{z}{y}$ $\log z - \log y$

2) $\log\left(\frac{3x}{a}\right)$ $\log 3 + \log x - \log a$

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In Class Work:

Condense using the properties of logarithms.

3) $\log z - \log y$

4) $\log 2 + \log 3 - \log 10$

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Notes!!! Power Property of Logs

$$\log (m)^n = n \cdot \log m$$

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In Class Work:

Expand using the properties of logarithms.

1) $\log z^3$ $3 \log z$

2) $\log (3x)^2$ $2 \log 3 + 2 \log x$

3) $2 \log 4y^3$ $2 \log 4 + 2 \log y^3$

$$2 \log 4 + 6 \log y$$

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In Class Work:

Condense using the properties of logarithms.

4) $2\log z - 4\log y$

5) $6\log 2 + 5\log 3 - 10\log 10$

6) $3\log z + 3\log p$

Handwritten solutions:

For problem 5: $\log \frac{2^6 \cdot 3^5}{10^{10}}$

For problem 6: $3\log(zp)$ and $\log(z^3 p^3)^3$

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Today's Activities:

- Notes and guided practice

P.W. for tonight:

- Worksheet finish #1 - 16

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