

Name _____ Mod _____

Write each in logarithmic form. Do not solve.

1. $2^5 = 32$

$$\log_2 32 = 5$$

2. $7^{-2} = \frac{1}{49}$

$$\log_7 \frac{1}{49} = -2$$

Write each in exponential form. Do not solve.

3. $\log_4 x = -5$

$$4^{-5} = x$$

4. $\log 170 = x$

$$10^x = 170$$

Expand. Use all the properties that apply.

5. $\log_4 \frac{a^2}{b^5}$

$$\log_4 a^2 - \log_4 b^5$$

$$2 \log_4 a - 5 \log_4 b$$

Use the properties to condense to one term.

6. $\log_6 x + 7 \log_6 y - 3 \log_6 z$

$$\log_6 x + \log_6 y^7 - \log_6 z^3$$

$$\log_6 xy^7 - \log_6 z^3$$

$$\log_6 \frac{xy^7}{z^3}$$