

## Homework – Exponential and Logarithmic Forms

Write in logarithmic form:

1.

$$2^3 = 8 \quad \log_2 8 = 3$$

$$2. \quad 81^{\frac{1}{2}} = 9 \quad \log_{81} 9 = \frac{1}{2}$$

$$3. \quad 8^{\frac{2}{3}} = 4 \quad \log_8 4 = \frac{2}{3}$$

$$4. \quad e^5 \approx 148.4 \quad \ln 148.4 = 5$$

Write in exponential form:

5.

$$\log_5 125 = 3 \quad 5^3 = 125$$

$$6. \quad \log_2 \frac{1}{8} = -3 \quad 2^{-3} = \frac{1}{8}$$

$$7. \quad \log_{25} 125 = \frac{3}{2} \quad 25^{\frac{3}{2}} = 125$$

$$8. \quad \ln 74 \approx 4.3 \quad e^{4.3} = 74$$

Evaluate without a calculator:

$$\log_2 32 =$$

← EQUALS 32

2 TO WHAT  
POWER

$$2^{\textcircled{5}} = 32$$

$$\log_9 243 =$$

← EQUALS 243

9 TO WHAT  
POWER

$$9^{\textcircled{\frac{5}{2}}} = 243$$