KEY Sheet #540

NAME: KEY

# EXP-LOG QUESTIONS

1. Find $x$

$$5e^{2x+1} = 3$$

a) EXACTLY (NO TI-83)

$$\ln(e^{2x+1}) = \ln(3/5)$$

$$2x+1 = \ln(3/5)$$

$$\frac{2x}{2} = \frac{\ln(3/5)-1}{2}$$

$$\boxed{x = \frac{\ln(3/5)-1}{2}}$$

b) if know $\ln(3) = 1.099$. $\ln(5) = 1.609$ (NO TI-83, 3 DECIMALS)

$$x = \frac{\ln(3) - \ln(5) - 1}{2} = \frac{0.099 - 1.609 - 1}{2}$$

$$= -\frac{1.51}{2} = \boxed{-0.755}$$

2. $\ln(1/2) = c\ln(2)$. Find $c$.

$$\ln(1/2) = -\ln(2)$$

$$\boxed{c = -1}$$

3. $\ln(\sqrt{x^1}) = a\ln(x)$. Find $a$

$$\ln(x^{1/2}) = \frac{1}{2}\ln(x)$$

$$\boxed{a = \frac{1}{2}}$$

4. $\log_3(7) = g \cdot \ln(7)$ Find $g$.

$$\ln(7)/\ln(3) = g\ln(7)$$

$$\boxed{g = 1/\ln(3)}$$