

T/K  
Final Exam  
Study Guide (cont)

CLOT

47.  $\log x = -7$

$10^{-7} = x$

$x = .0000001$

48.  $3^{x-3} = 5$

$\log 3^{x-3} = \log 5$

$(x-3)\log 3 = \log 5$

$x-3 = \frac{\log 5}{\log 3}$

$x = \frac{\log 5}{\log 3} + 3$

#4

49.  $3\log_2 x + 1 = 7$

$3\log_2 x = 6$

$\log_2 x^3 = 6$

$x^3 = 2^6$

$x^3 = 64$

$x = 4$

50.  $2\log_3 x - 3 = 4$

$2\log_3 x = 7$

$\log_3 x^2 = 7$

$3^7 = x^2$

$5 \quad 5$

$x = \sqrt{3^7} = \sqrt{3^6 \cdot 3^1} = 3^3 \sqrt{3} = 27\sqrt{3}$

63.  $A = Pe^{rt}$

$A = 450e^{(.046 \cdot 3)}$

$A = 450e^{.138}$

$A \approx \$516.59$

64.  $A = Pe^{rt}$

$A = 4800e^{(.062 \cdot 17)}$

$A = 4800e^{1.054}$

$A \approx \$13771.70$

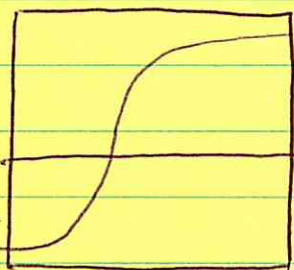
76. a)  $P(0) = \frac{300}{1+e^{4-0}} = \frac{300}{1+e^4} \approx 5.396$  about 5 students

b)  $P(3) = \frac{300}{1+e^{4-3}} = \frac{300}{1+e} \approx 80.682$  about 81 students

c)  $100 = \frac{300}{1+e^{4-t}}$

$t \approx 3.307$

Sometime during the 4th day, 100 kids will be infected



[0, 30] by [-10, 300]

d) 300 kids  
(limit to growth)