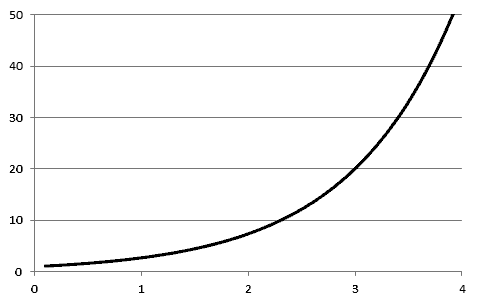
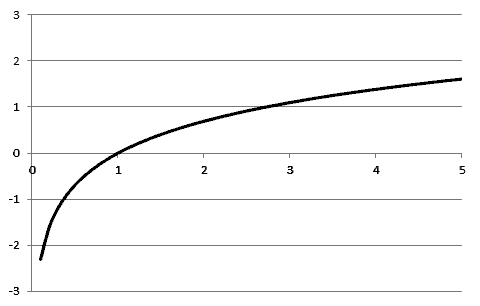
**Colorado Technical University**

**Course:** MATH116 – Foundations for Calculus

**Unit 7 Part 13 Readings: Growth and Decay Models**

**Growth Models**

Exponential Models Logarithmic Models



Start slow then speed up Start fast then slow down

Compound Interest: A = P(1+r/n)nt

A = accumulated value

P = the principal amount of money

t = years

r = annual percentage rate (in decimal form)

n = compounded n times per year

Population Growth: A = A0 ekt

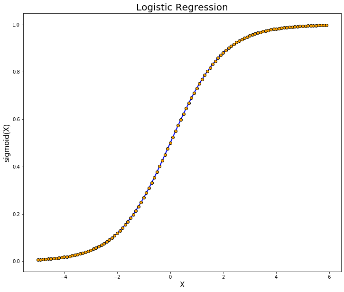
A = amount at time t

r = growth rate

A0 = original amount

if k > 0 then the population is growing

if k < 0, then the population is shrinking

Logistic Growth (growth within a limit): A = c/ (1+ ae-bt)

c > 0

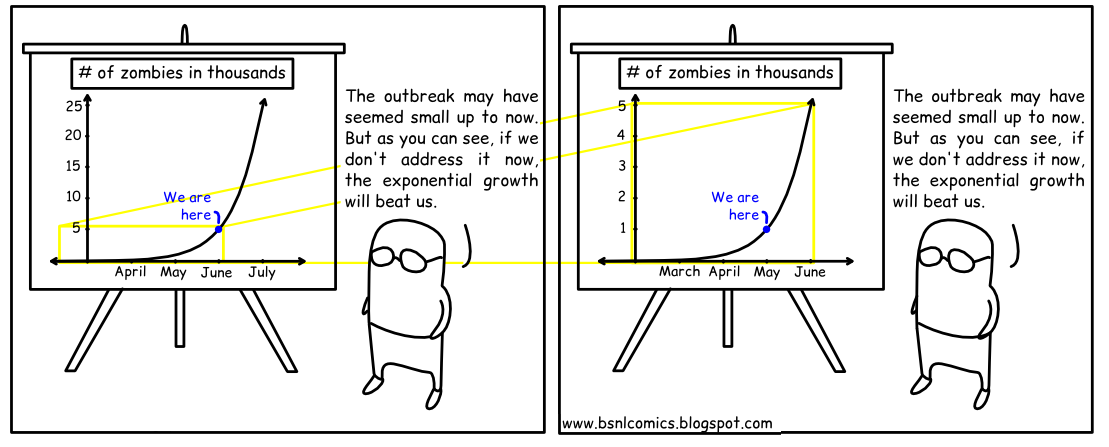
b > 0

as time t increases:

ae-bt approaches 0

A gets closer to the limit c

Min + (Max-Min)/(1+e^(-rate\*(day-inflexion pt)))



**NOW**

**LAST MONTH**

**WHY I DON’T TRUST EXPONENTIAL GRAPHS**

