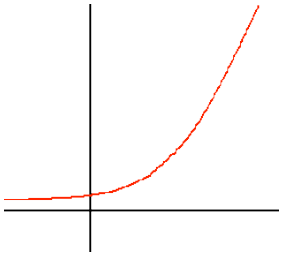
EXPONENTIAL FUNCTIONS STUDY GUIDE

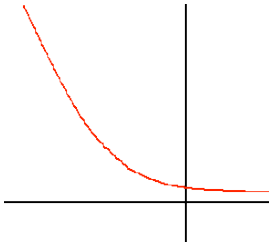
	Different Types Of Functions		
NAME	**LINEAR**	**QUADRATIC**	**EXPONENTIAL**
SKETCH:			
Exponent of X:	X^1	X^2	ab^x
Discription	Constant change in Y, Constant change in X	Constant change in Y, constant secondary change in X.	**CONSTANT RATIO IN Y, CONSTANT CHANGE IN X.**

General Notes

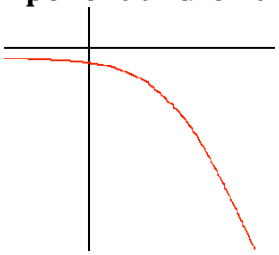
- To find the constant ratio in Y, divide each # by it's previous
- In compound interest, time is in years. With everything else, time can be in any unit.
- Always check for a constant change in X
- Remember: One can never have a ½ person, fish etc. so one must round.



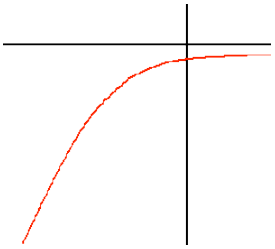
a>0, b>1
(Exponential Growth)



a>0, 0<b<1



a<0, b>1
(Exponential Decay)



a<0, 0<b<1

FORMULAS

Exponential Function Formula:
$f(x)=a(b)^x$

a=y intercept
b=constant ratio

Exponential Growth Formula:
$f(x)=a(1+r)^t$

Exponential Decay Formula:
$f(x)=a(1-r)^t$

Half Life Formula:
$A=P(0.5)^t$

$T=\frac{\text{Amount of time}}{\text{Half Life Of Element}}$

Compound Interest Formula:
$A=P(1+r/n)^{nt}$

A=total balance after *t* years
P=original amount
r=interest rate
t=time (IN YEARS)
n=number of times the interest is compounded in one year:
--Annually = Once
--Semiannually = twice
--Quarterly = Four Times
--Monthly = Twelve Times