Basic Cobb-Douglas Production Function

Key Properties	Marginal Product of Capital	Marginal Product of Labor
-Constant Returns to Scale	MPK=Partial derivate of F(K,N)	MPN=Partial derivate of F(K,N)
-If inputs are 0 outputs will be 0	MPK= Aα(K/N)^α-1	MPK= A(1-α)(K/N)^α
-The production function is increaseing in each of the inputs	α(Y/K) > 0	(1-α)(Y/K) > 0
-The production function exhibits diminishing returns	.	

Neg Impact of Aging LAbor Force

-Rapid retirement decreases the firms overall knowledge, decreasing productivity.

-Productivity peaks at age 50

Growth Rate of GDP

Y= (Y/N) * N

then take logs

lnY = ln[Y/N] +lnN

Differentiate for time

Y°/Y = (Y°/N)/(Y/N) +N°/N

Growth rate of GDP equals the growth rate of labor productivity and the growth rate of labor stock

Solow Growth Model Basics

Aggregate Production Function	Y=AK$^\alpha$N$^{1-\alpha}$
Per Worker Production Function	y= Ak$^\alpha$
Capital Stock Accumulation	K°= I-δK
Capital Per Worker Accumulation	k° =sf(k)-(n+δ)k
Steady-State Equilibrium	k°= 0 -> sf(k)= (n+δ)k