Econ 2 - Lecture 11 - 5/7/25

Discussion Activity #3 This Week

Weekly Review Session, Thursday, 5 & 6^{pm}, ON Zoom!
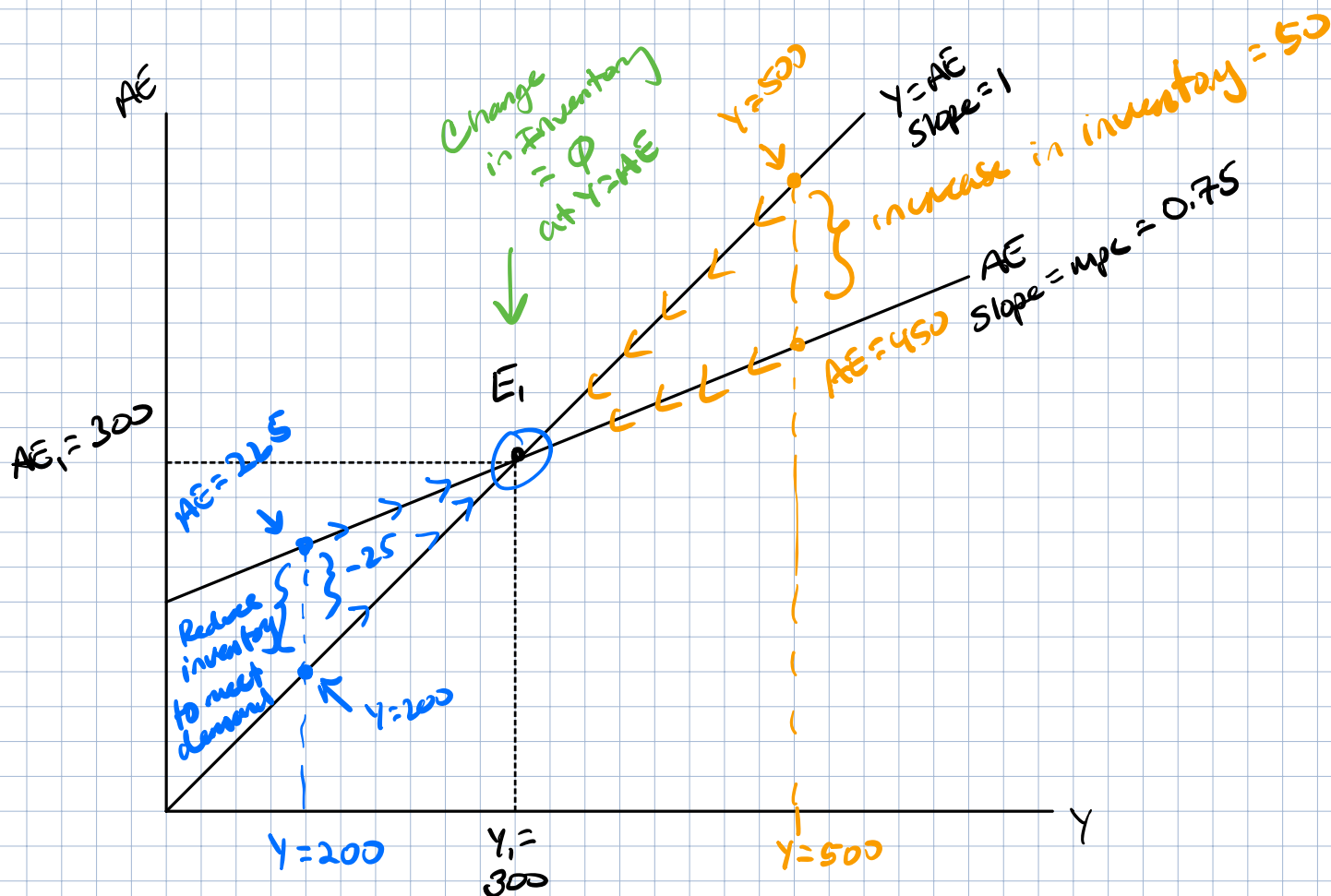
Lecture Quiz #5, Released Today, due Monday, May 12th

Last class: Short-Run Equilibrium @ Y=AE!

= 25

C + 25 = AE

$\rightarrow$ Y - AE

200 - 225
= -25

Real GDP (Y)	Consumption (C)	Planned Investment (I^p)	Government Expenditures (G)	Net Exports (NX)	Aggregate Expenditures (AE)	Change in Inventory
200	200	10	10	5	225	-25
300	275	10	10	5	300	∅
400	350	10	10	5	375	25
500	425	10	10	5	450	50
600	500	10	10	5	525	75

= 500 - 450

Change in Inventory = ∅ at Y=AE

Y=AE Slope = 1

increase in inventory = 50

AE Slope = mpc = 0.75

AE=450

E_1

$AE_1 = 300$

AE=225

Reduce inventory to meet demand
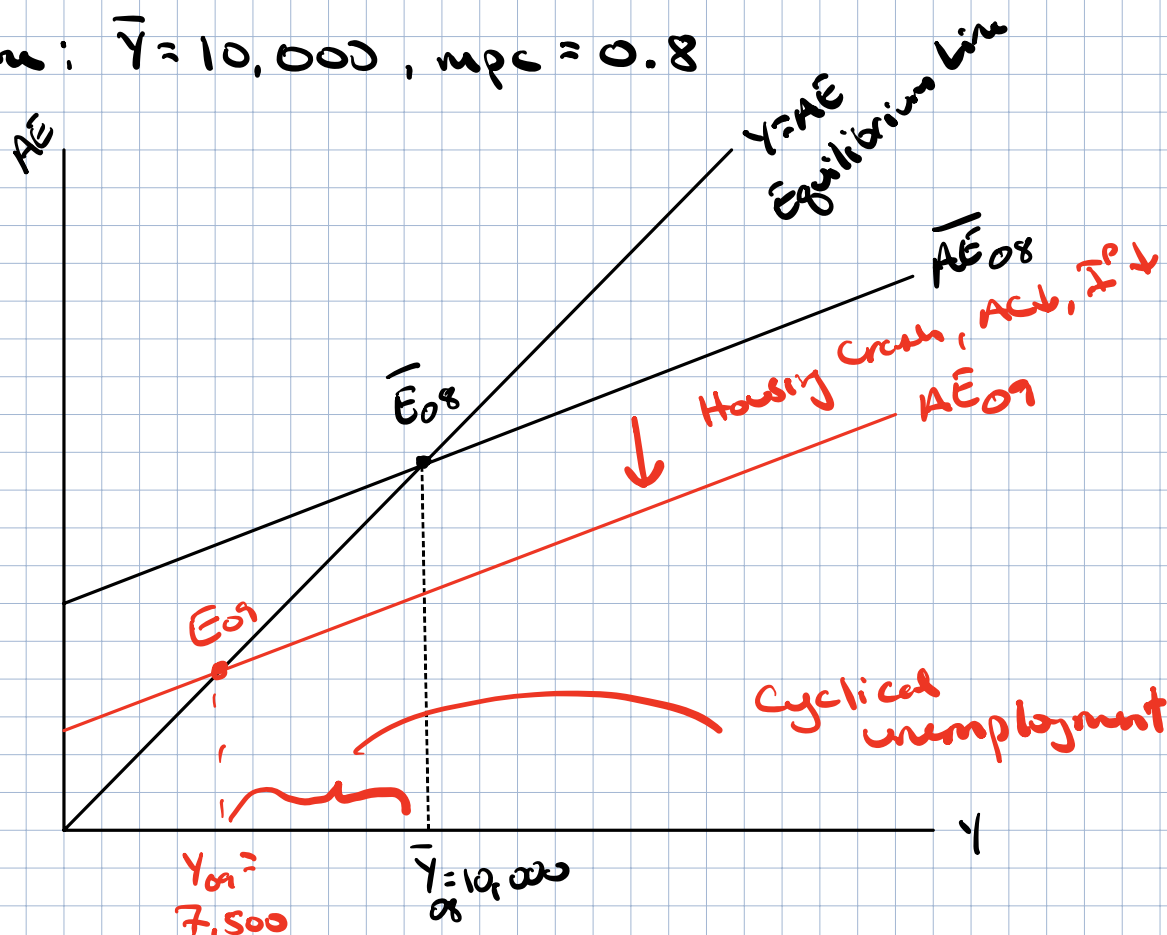
Y=200

$Y_1 = 300$

Y=500

What is the value of Y when change in inventory = -25?

Goal of Course: Full-Employment Level of Output, $\bar{Y}$

No cyclical unemployment

Assume: $\bar{Y} = 10,000$, mpc $= 0.8$

Model out housing market crash of 2008

→ What components of our model change?

　→ Wealth ⇒ Households decrease spending, Income is same

　　　　→ Autonomous Consumption ↓, AC ↓

　→ Consumer Confidence ↓ ⇒ AC ↓

　→ Decrease in real estate activity ⇒ I^P ↓

Expect ⇒ Decrease in C (AC) ⎫
　　　　 Decrease in I^P 　　⎬ ↓ AE
　　　　　　　　　　　　　　 ⎭

Goal is to get Y back to $\bar{Y}$!
At $Y_{09} = 7,500$, want to be at $\bar{Y} = 10,000$

Ask for help! Warren Buffett → rich, retired
How much do you need? Buy some machines (I^o)!

Setting: Need to increase Y by 2500, mpc = 0.8
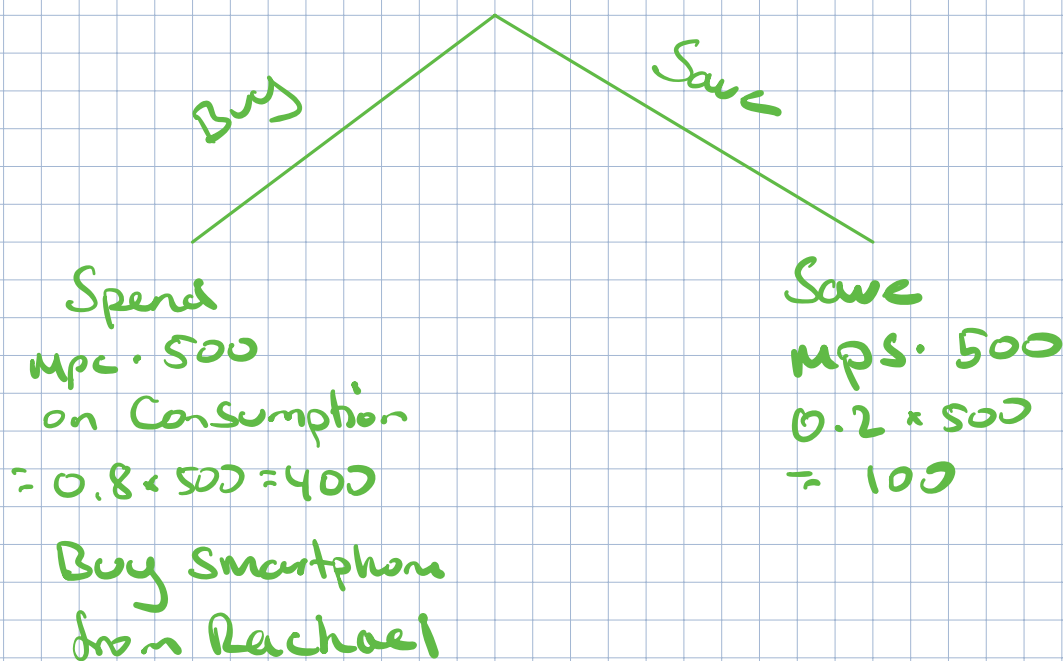
Round 1: Ask Warren to buy $500 in machines
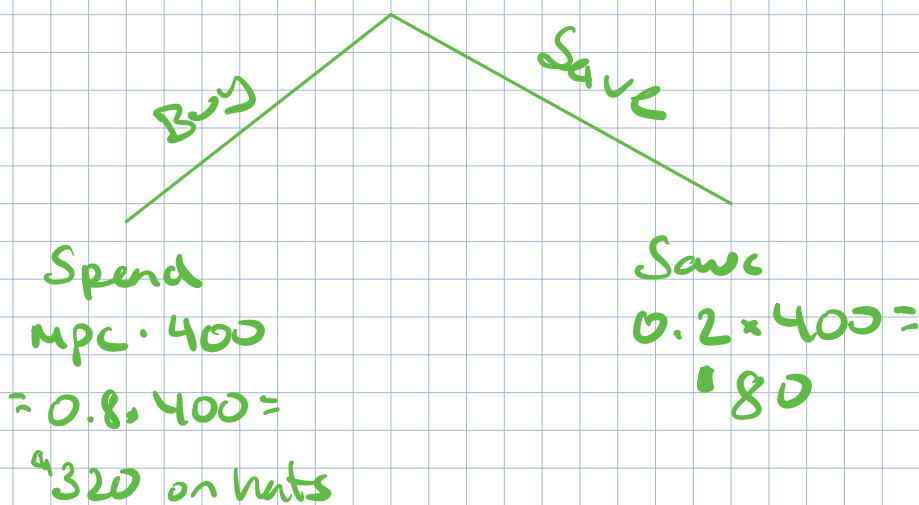Dylan sells $500 in computer chips to Warren
                Increase Y by $500 $\Delta Y = 500$
                Increase income by $500

                          Buy   Save

Spend   Save
mpc · 500   mps · 500
on Consumption   0.2 × 500
= 0.8 × 500 = 400   = 100   Round 2:
                                                  $\Delta Y = 400$
     Buy Smartphone
     from Rachael
                                                  Round 3:
               Buy   Save $\Delta Y = 320$

Spend   Save
mpc · 400   0.2 × 400 =
= 0.8 · 400 = $80
$320 on hats

After 3 Rounds ⇒ $\Delta Y = 500 + 400 + 320 = 1220$
                              ↑   ↑   ↑
                          initial I^o good 1   good 2

Total Change in Y after ~ 50 rounds = #2500

Total Change in Y = Initial ΔI^p × Expenditure Multiplier

$\underbrace{}_{500}$ × $\underbrace{}_{5}$

Expenditure Multiplier = Number of times each initial change in spending is multiplied through the economy

$\underbrace{}$

Function of mpc

= 5 times

Expenditure Multiplier = $\dfrac{1}{1-mpc}$ = $\dfrac{1}{MPS}$

If mpc = 0.8 ⇒ Exp. Multiplier = $\dfrac{1}{1-0.8}$ = $\dfrac{1}{0.2}$ = 5

As mpc decreases ⇒ Exp. multiplier decreases

If mpc = 0.5 ⇒ Exp. Multiplier = $\dfrac{1}{1-0.5}$ = $\dfrac{1}{0.5}$ = 2

Total Change in Y = $\dfrac{1}{1-mpc}$ ΔI^p
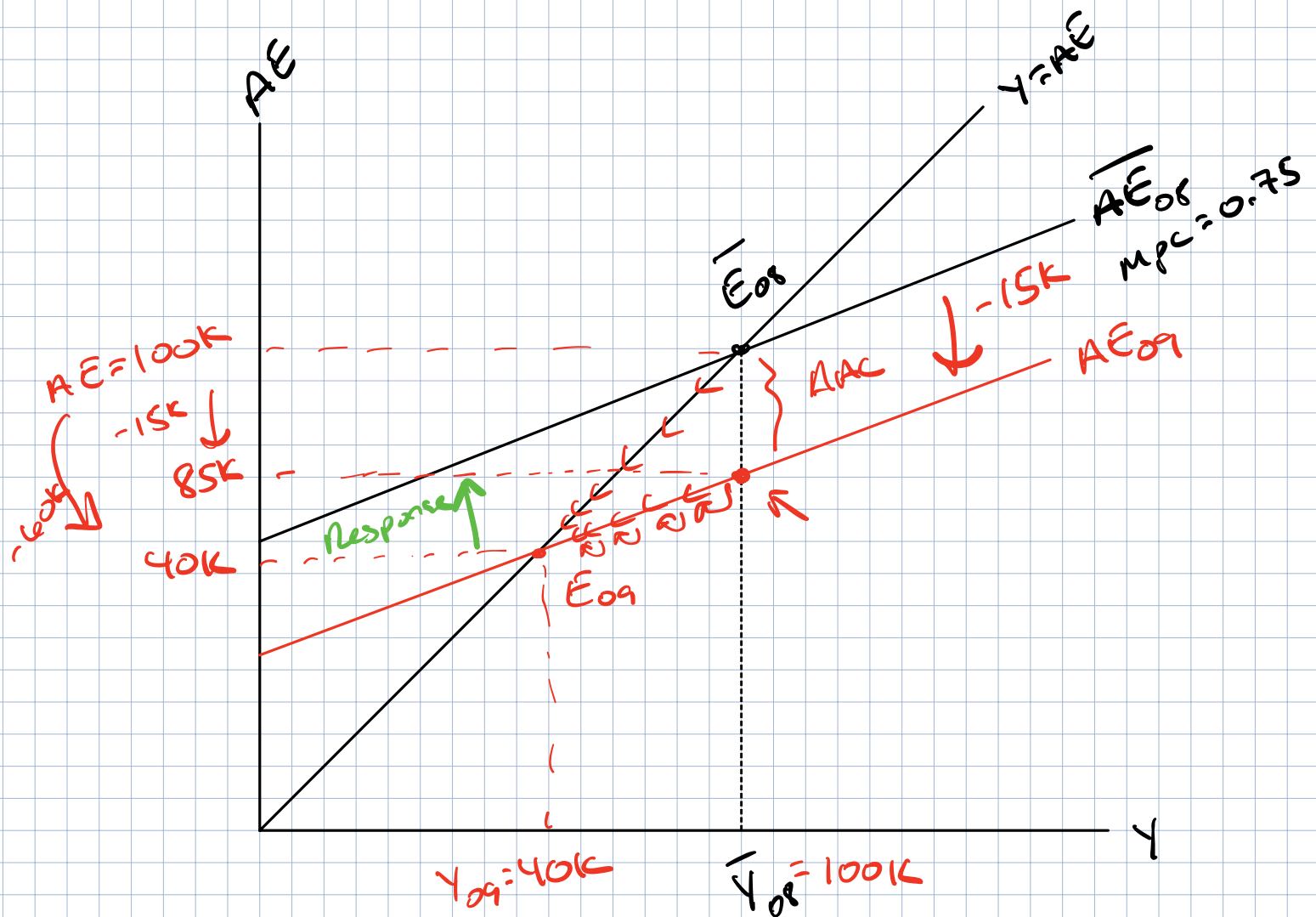
$\underbrace{}$

$2500 = \dfrac{1}{1-0.8} \cdot \Delta I^p = 5 \times \Delta I^p$

$\dfrac{2500}{5} = \boxed{500 = \Delta I^p}$

Mpc = 0.75 → Expenditure Multiplier = $\frac{1}{1-0.75}$ = 4

Expenditure Multiplier applies to I^P, AC, G, NX
→ missing? Does apply to taxes

Reduce Autonomous Consumption by $15,000

What is change in mpc?

AE (vertical axis)

Y=AE

$\overline{AE_{08}}$ mpc = 0.75

$\overline{E_{08}}$

AE=100K
-15K ↓
85K
40K

-15K ↓ } ΔAC

AE09

Response ↑ (green)

E_{09}

Y_{09} = 40K $\overline{Y_{08}}$ = 100K   Y

ΔAC = -15K,   ΔY = $\frac{1}{1-0.75} \times (-15K) = -60K$

Increase AE09 back to $\overline{AE}$ ⇒ counter ΔAC = -15K
↳ Increase AC by 15K

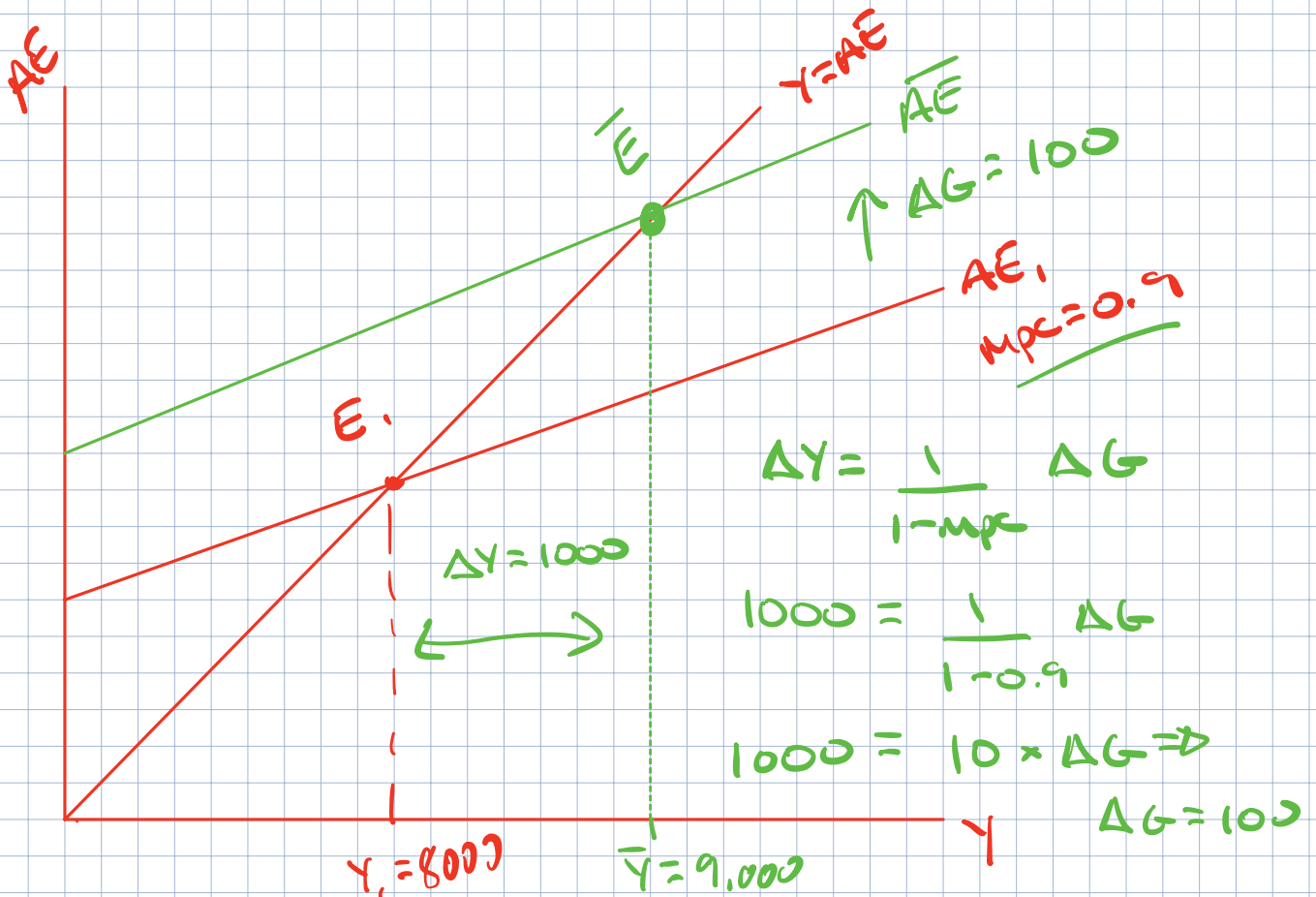$G \xrightarrow{\Delta G=100} G' = 200 + 100 \qquad C+740$

Real GDP (Y)	Consumption (C)	Planned Investment (I^P)	Government Expenditures (G)		Net Exports (NX)	Aggregate Expenditures (AE)	
5000	4560	500	200	300	40	5300	5400
6000	5460	500	200	300	40	6200	6300
7000	6360	500	200	300	40	7100	7200
8000	7260	500	200	300	40	8000	8100
9000	8160	500	200	300	40	8900	9000
10000	9060	500	200	300	40	9800	9900

Y_1, $\bar{Y}$ $\Delta Y = 1000$ $+740$

Find equilibrium level of Y?

$$MPC = \frac{\Delta C}{\Delta Y} = \frac{5460 - 4560}{6000 - 5000} = \frac{900}{1000} = 0.90$$

$Y = AE$ at $Y = 8000$, $AE = 8000$

$$\Delta Y = \frac{1}{1 - MPC} \Delta G$$

$$1000 = \frac{1}{1 - 0.9} \Delta G$$

$$1000 = 10 \times \Delta G \Rightarrow$$

$$\Delta G = 100$$

$\bar{Y} = 9000$, what ΔG need to be in order to move to $\bar{Y}$?