Economics 102
Summer 2016
Quiz #3 with

Name _____

Show your work and present your work clearly and neatly!

1. Consider the aggregate production function depicted in class lecture to answer this set of questions.

a. (1.5 points) The labor market is in equilibrium and the economy is currently producing a level of real GDP we will call Y1. Suppose that the amount of capital in the economy is decreased due to a ferocious hurricane. Given this information and holding everything else constant, what do you predict will happen to the following?

   i. Real GDP will ___decrease___

   ii. Labor productivity will ___decrease___

   iii. Capital productivity will ___increase___
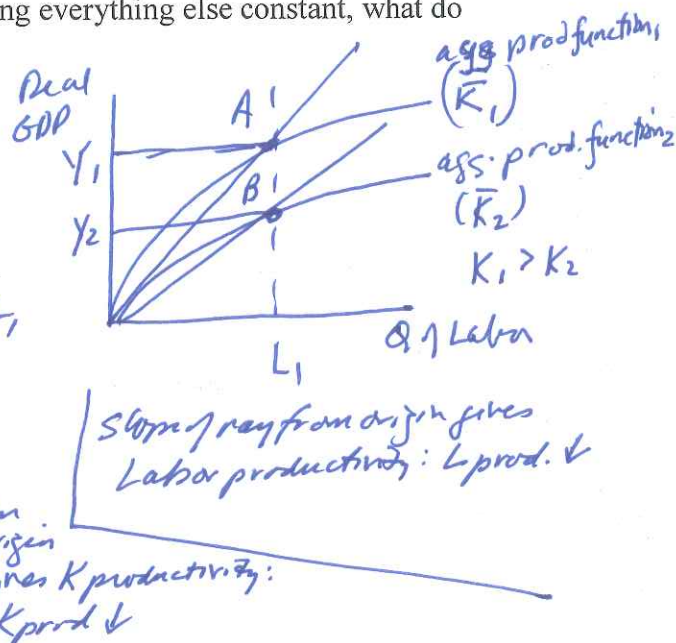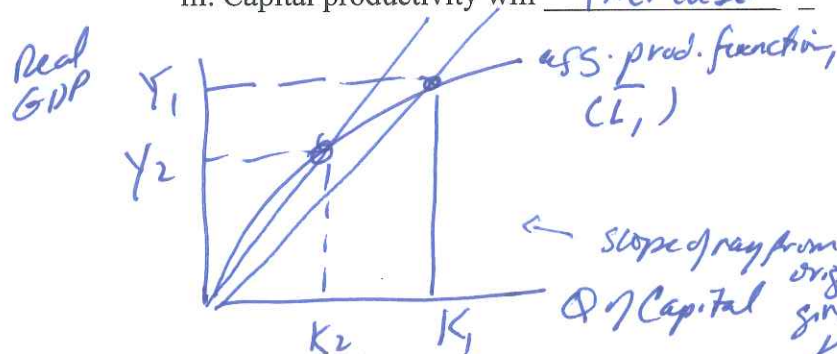
b. (1.5 points) The labor market is in equilibrium and the economy is currently producing a level of real GDP we will call Y1. Suppose that the amount of technology in the economy increases at the same time that the amount of labor in the economy increases. Given this information and holding everything else constant, what do you predict will happen to the following?

   i. Real GDP will ___increase___

   ii. Labor productivity will ___be indeterminate___

   iii. Capital productivity will ___increase___

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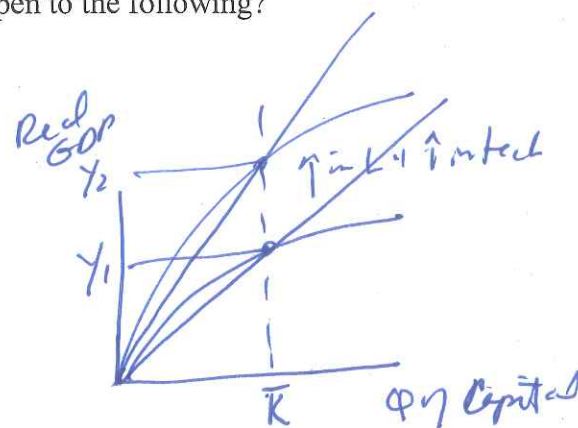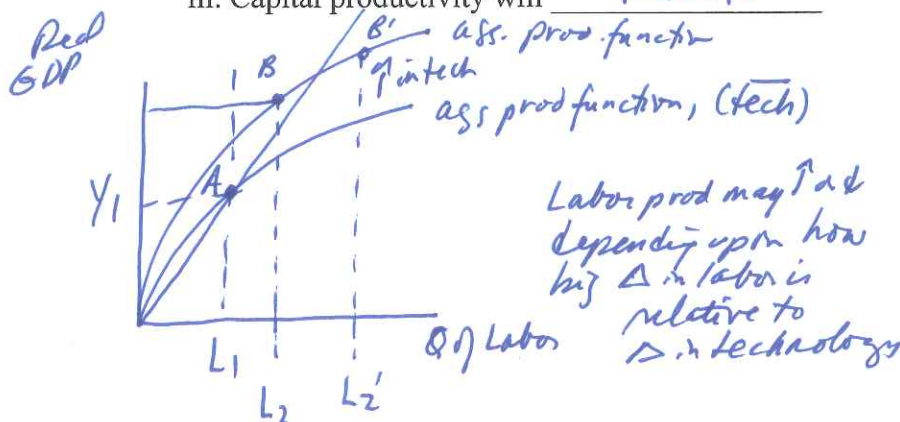
2. Consider the Keynesian short-run model discussed in class for this question. You are given the following information:

C = a + b[Y – (T – TR)] where C is consumption spending, Y is real GDP, (T – TR) is net taxes, "a" is autonomous consumption and "b" is the marginal propensity to consume
(T – TR) = net taxes = Taxes – Transfers = $40
G = government spending = $50
I = investment spending = $20
(X – IM) = net foreign sector spending = Exports – Imports = $10

You are also given the following data:

Y or Real GDP	(T – TR) or Net Taxes	C or Consumption Spending	Sp or Private Saving
$100	$40	$116	−56
$200	$40	176	−16
$300	$40	236	24
$400	$40	$296	64

Left margin annotation:
Y−(T−TR)
60
160
260
360

a. (1 point) Given the above information, find the value of autonomous consumption, the value of the marginal propensity to consume, and the equation for the consumption function as a function of disposable income, [Y – (Y – TR)]. Determine whether this economy is operating with a government deficit, a balanced budget, or a government surplus.

   i.   autonomous consumption is equal to ___80___
   ii.   the marginal propensity to consume is equal to _.6_ (see next page)
   iii. the consumption function can be written as ___C = 80 + .6 [Y − (T−TR)]___
   iv.   this economy is operating with a ___govt deficit___

   (iv) G > (T−TR) ⟹ govt deficit

Right margin calculation:
$$\begin{array}{r} 340 \\ .4\overline{)\,136 0} \\ 12 \\ \hline 16 \end{array}$$

b. (1 point) Using the above information find the equilibrium level of real GDP for this economy. Show your work.

Ye = AEmes.
Ye = C + I + G + (X− IM)
Ye = 80 + .6[Ye − 40] + 20 + 50 + 10

Ye = 160 + .6Ye − 24
.4Ye = 136
Ye = 136/.4

$$\boxed{Ye = 340}$$

c. (1 point) Fill in all the missing values in the table.

   See next page

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(ii) $\Delta C = 296 - 116 = 180$

$\Delta(y-(T-TR)) = 300$

$MPC = \dfrac{\Delta C}{\Delta(y-(T-TR))} = \dfrac{180}{300} = \dfrac{3}{5} = .6$

$MPS = .4$

(i) $C = a + b[Y-(T-TR)]$

(iii) $C = a + .6[Y-(T-TR)]$

$116 = a + .6[60]$

$116 = a + 36$

$\boxed{a = 80}$ (i)

$C = 80 + .6[Y(T-TR)]$

$\begin{array}{r} 116 \\ -36 \\ \hline 80 \end{array}$

Missing Values in Table

$C = 80 + .6[Y-40]$

$C = 80 + .6Y - 24$

$C = 56 + .6Y$

if $Y = 200 \Rightarrow C = 56 + .6(200) = 56+120 = 176$

if $Y = 300 \Rightarrow C = 56 + .6(300) = 56+180 = 236$

$Sp = -80 + .4[Y-(T-TR)]$

$Sp = -80 + .4Y - 16$

$Sp = -96 + .4Y$

if $Y = 100 \Rightarrow Sp = -96 + .4(100) = -56$

if $Y = 200 \Rightarrow Sp = -96 + .4(200) = -16$

if $Y = 300 \Rightarrow Sp = -96 + .4(300) = -96+120 = 24$

if $Y = 400 \Rightarrow Sp = -96 + .4(400) = -96+160 = 64$

Alternatively:

$Y = C + Sp + (T-TR)$

$Y - (T-TR) = C + Sp$

$Sp = Y - (T-TR) - C$

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3. Consider the market for loanable funds as discussed in class to answer this set of questions.

a. (2 points) The loanable funds market is initially in equilibrium and the government is operating with a balanced budget. The government decides to increase its government spending while maintaining a constant level of taxes. Holding everything else constant, what do you predict will happen to the following?

i. The equilibrium interest rate will ___increase___

ii. The equilibrium level of private investment spending will ___decrease___

iii. The equilibrium level of private saving will ___increase___

iv. The equilibrium level of consumption spending will ___decrease___
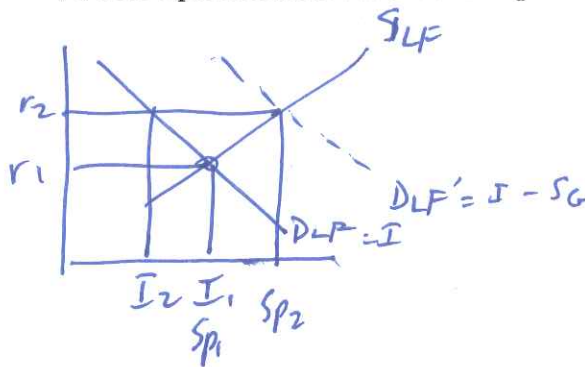
b. (2 points) The loanable funds market is initially in equilibrium and the government is operating with a budget surplus. Suppose that the government reduces its budget surplus (it is still a surplus, just smaller) at the same time that there is an increase in the demand for private investment spending at every interest rate. Holding everything else constant, what do you predict will happen to the following?

i. The equilibrium interest rate will ___increase___

ii. The equilibrium level of private investment spending will ___decrease, increase, or stay the same___

iii. The equilibrium level of private saving will ___increase___

iv. The equilibrium level of consumption spending will ___decrease___