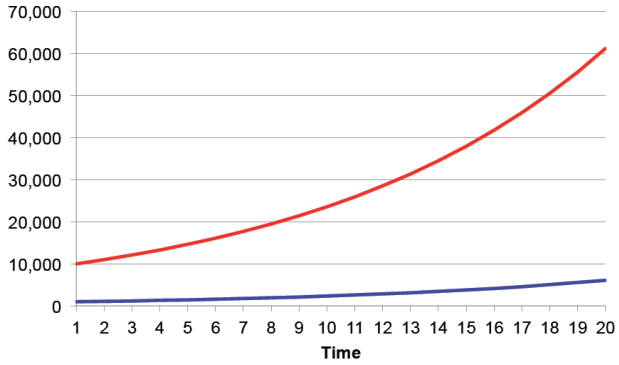
Quiz 2

Name:

1. True or false (3 points):

The figure to the right displays real GDP overtime for two different countries in a constant scale (vertical axis interval is in constant dollars and each step is $10,000). By looking at the two lines, we can conclude that GDP represented by the top line grew at a higher rate than the GDP represented by the bottom line.



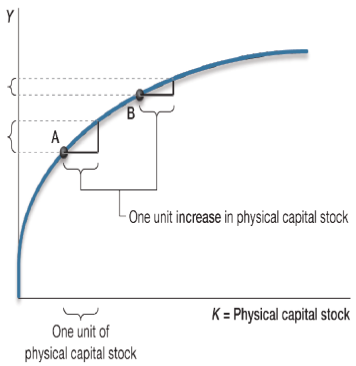
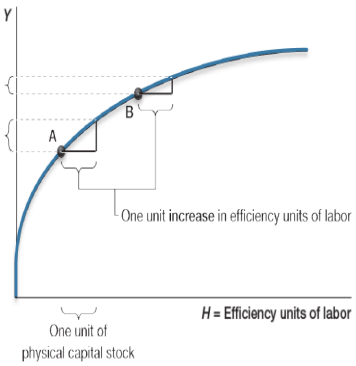
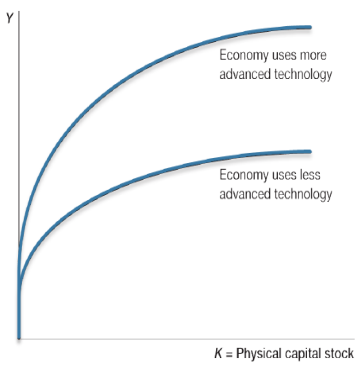
Your answer: ***F***

2. Short answer (10 points):

a) Define aggregate production function and show how a country can increase its GDP.
b) Define sustained economic growth and identify which element(s) of the aggregate production function can and cannot lead a country towards sustained economic growth.

Your answer:

a) Aggregate production function: $Y = A \cdot F(H, K)$, where Y is output (GDP), H is the efficiency units of labor, and K is capital. $\uparrow H \Rightarrow \uparrow Y$, $\uparrow K \Rightarrow \uparrow Y$, $\uparrow A \Rightarrow \uparrow Y$
b) Sustained economic growth is when a country's GDP per capita grows at a relatively constant growth rate over a long period of time.

$\uparrow K$	$\uparrow H$	$\uparrow A$
		
Because of LDMP, $\uparrow K$ cannot lead to sustained growth	Because of LDMP, $\uparrow H$ cannot lead to sustained growth	Improvements in A can be infinite $\Rightarrow$ can lead to sustained growth

3. Problem (7 points):

Consider a country where real GDP per capita is currently $1,500. What will GDP per capita be in 100 years if the economy experiences a constant growth of 1% and if the economy experiences a constant growth of 4%?

Your answer:

Use formula for exponential growth: $X_{t+n} = X_t(1+g)^n$
GDP per capita in 100 years if growth is 1%: $Y_{0+100} = Y_0 \cdot (1+0.01)^{100} = \$1,500 \cdot (1.01)^{100} = \$4,057.22$
GDP per capita in 100 years if growth is 4%: $Y_{0+100} = Y_0 \cdot (1+0.04)^{100} = \$1,500 \cdot (1.04)^{100} = \$75,757.42$