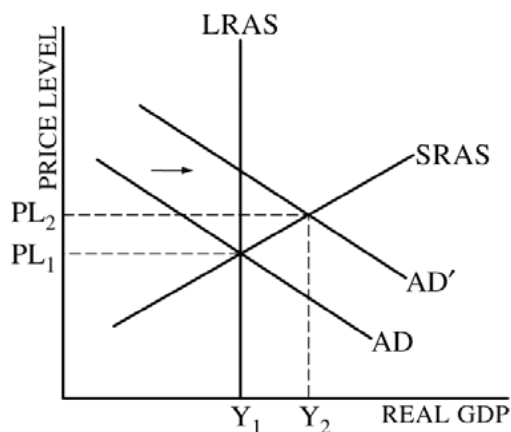


**AP<sup>®</sup> MACROECONOMICS  
2012 SCORING GUIDELINES**

**Question 3**

**6 points** (2 + 1 + 1 + 2)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph and showing the AD and SRAS curves and  $PL_1$ .
- One point is earned for showing a vertical LRAS curve at the output  $Y_1$  through the intersection of the SRAS and AD curves.

(b) 1 point:

- One point is earned for showing a rightward shift of the aggregate demand curve and showing  $Y_2$  and  $PL_2$ .

(c) 1 point:

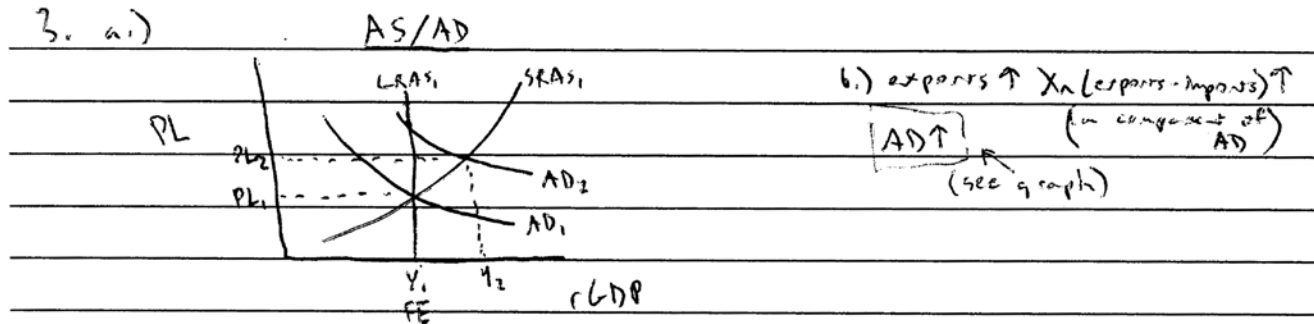
- One point is earned for stating that real wages will fall because the price level has increased and the nominal wages are fixed in the short run.

(d) 2 points:

- One point is earned for stating that the investment component of AD will change.
- One point is earned for stating that the long-run aggregate supply curve will shift to the right because the capital stock has increased.

3. Assume the economy of Andersonland is in a long-run equilibrium with full employment. In the short run, nominal wages are fixed.
- Draw a correctly labeled graph of short-run aggregate supply, long-run aggregate supply, and aggregate demand. Show each of the following.
    - Equilibrium output, labeled  $Y_1$
    - Equilibrium price level, labeled  $PL_1$
  - Assume that there is an increase in exports from Andersonland. On your graph in part (a), show the effect of higher exports on the equilibrium in the short run, labeling the new equilibrium output and price level  $Y_2$  and  $PL_2$ , respectively.
  - Based on your answer in part (b), what is the impact of higher exports on real wages in the short run? Explain.
  - As a result of the increase in exports, export-oriented industries in Andersonland increase expenditures on new container ships and equipment.
    - What component of aggregate demand will change?
    - What is the impact on the long-run aggregate supply? Explain.

3. a.)



c.)  $nWages$  - inflation =  $rWages$  because  $nWages$  are fixed and inflation increases,  $rWages \downarrow$

stay same are fixed  $\uparrow$  (because  $PL \uparrow$ )  $\downarrow$

d.) (i) export-oriented industries: business spending (which is)  $I \uparrow$  (a component of AD)

(ii)  $I$  spending on new capital and equipment  $\uparrow$  nation's capital stock  $\uparrow$  Nation's production capacity  $\uparrow$

PPF  $\rightarrow$  LRAS  $\uparrow$  LRAS will shift to the right

3. Assume the economy of Andersonland is in a long-run equilibrium with full employment. In the short run, nominal wages are fixed.

(a) Draw a correctly labeled graph of short-run aggregate supply, long-run aggregate supply, and aggregate demand. Show each of the following.

(i) Equilibrium output, labeled  $Y_1$

(ii) Equilibrium price level, labeled  $PL_1$

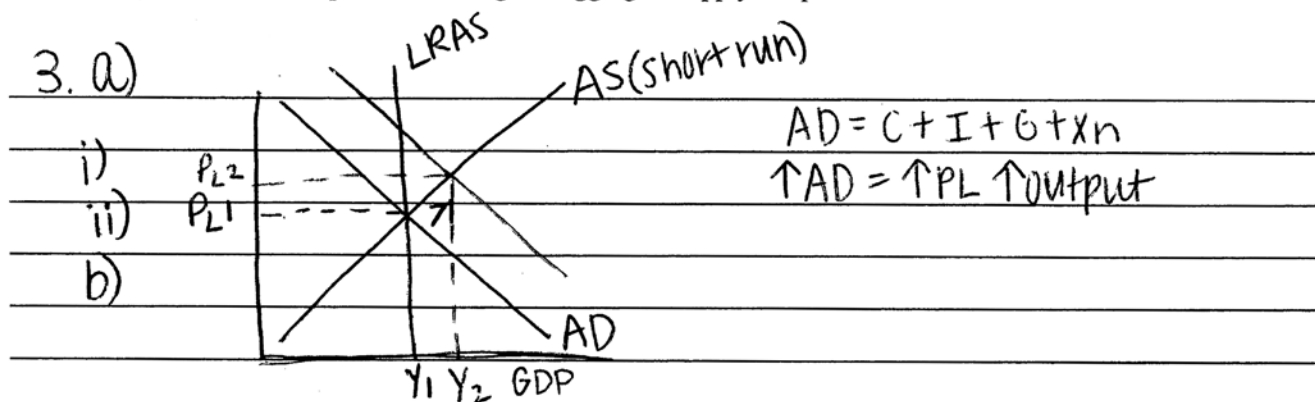
(b) Assume that there is an increase in exports from Andersonland. On your graph in part (a), show the effect of higher exports on the equilibrium in the short run, labeling the new equilibrium output and price level  $Y_2$  and  $PL_2$ , respectively.

(c) Based on your answer in part (b), what is the impact of higher exports on real wages in the short run? Explain.

(d) As a result of the increase in exports, export-oriented industries in Andersonland increase expenditures on new container ships and equipment.

(i) What component of aggregate demand will change?

(ii) What is the impact on the long-run aggregate supply? Explain.



c) The impact of higher exports on real wages in the short run is that they will increase because the price level will increase.

i) AD  $\uparrow$  because investment  $\uparrow$  and exports  $\uparrow$ .

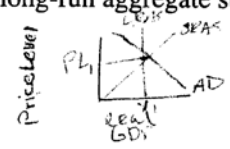
d) i) AD will remain the same and LRAS will  $\uparrow$ .

ii) LRAS will move to the right because there will be economic growth  $\hat{=}$  an increase in output.

3. Assume the economy of Andersonland is in a long-run equilibrium with full employment. In the short run, nominal wages are fixed.

(a) Draw a correctly labeled graph of short-run aggregate supply, long-run aggregate supply, and aggregate demand. Show each of the following.

- (i) Equilibrium output, labeled  $Y_1$
- (ii) Equilibrium price level, labeled  $PL_1$



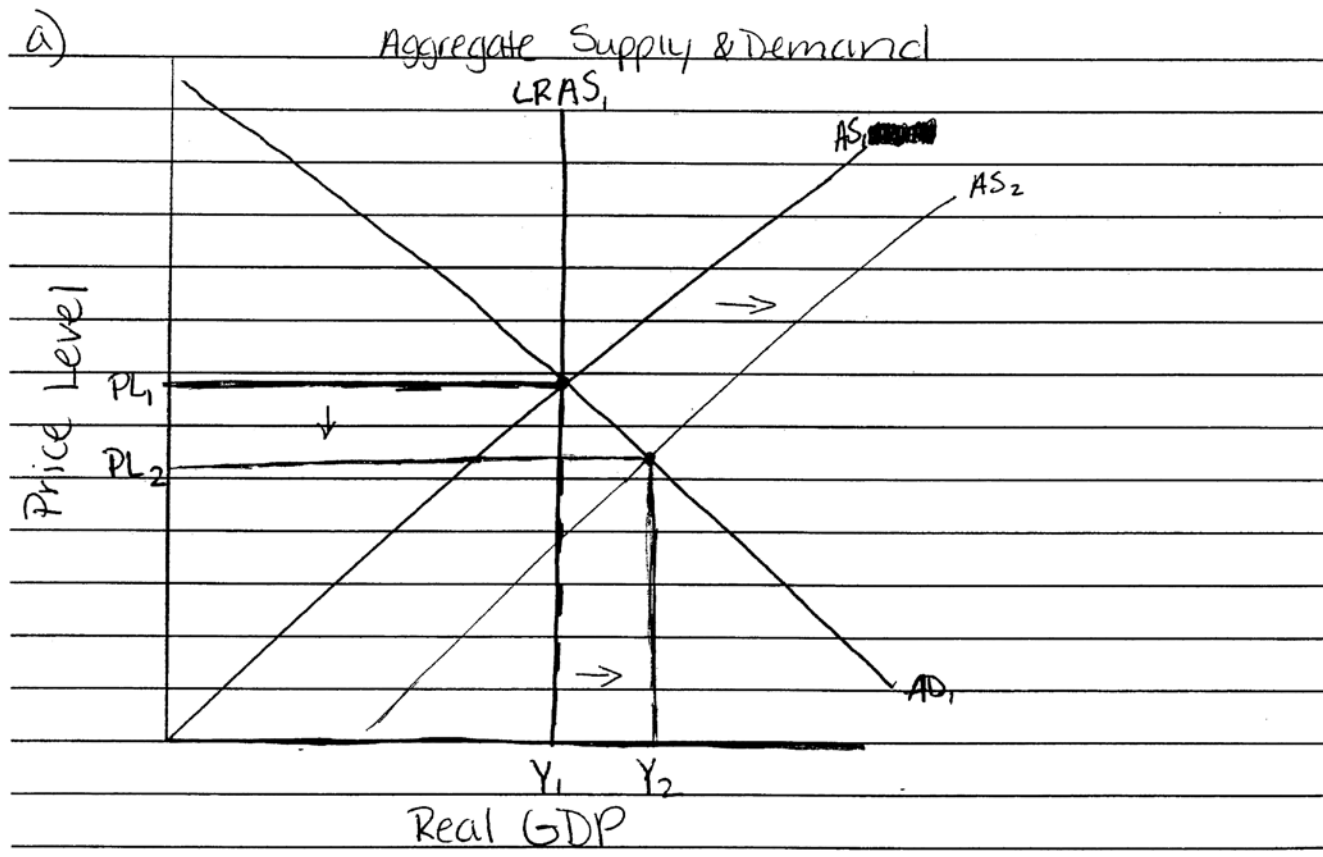
(b) Assume that there is an increase in exports from Andersonland. On your graph in part (a), show the effect of higher exports on the equilibrium in the short run, labeling the new equilibrium output and price level  $Y_2$  and  $PL_2$ , respectively.

$\uparrow$  in exports  $\uparrow$  Real GDP (net exports)  $\rightarrow$  AD

(c) Based on your answer in part (b), what is the impact of higher exports on real wages in the short run? Explain.

(d) As a result of the increase in exports, export-oriented industries in Andersonland increase expenditures on new container ships and equipment.

- (i) What component of aggregate demand will change?
- (ii) What is the impact on the long-run aggregate supply? Explain.



- i) see graph
- ii) see graph

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Additional answer page for Question 3.

b) see graph

c) Higher exports cause a ~~an~~ decrease in price level.

Because of the lower price level, real wages will decrease as well because of the deflation in the economy.

d) i) The aggregate demand will increase because of the decline in price level.

ii) The long-run aggregate supply will shift to the ~~left~~ right. In the short run, the supply also goes to the ~~left~~ right but ~~if~~ if there is more spending done on new container ships and equipment, this will affect the sum total supply in the long run as well.

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# AP<sup>®</sup> MACROECONOMICS 2012 SCORING COMMENTARY

## Question 3

### Overview

Part (a) examined the students' ability to draw an aggregate supply-and-demand diagram depicting an economy at full employment. Part (b) tested the students' ability to show the effects of an increase in a country's exports on the country's equilibrium price level and equilibrium real GDP. Part (c) tested the students' ability to explain the effect of an increase in exports on real wages in the short run. Part (d) tested students' ability to identify the component of aggregate demand affected by an increase in firms' expenditures on equipment and to explain the effect of the increased equipment expenditures on long-run aggregate supply.

### Sample: 3A

**Score: 6**

The student answers all parts of the question correctly and so earned all 6 points.

### Sample: 3B

**Score: 4**

The student's graph is correct and so earned both points in part (a). In part (b) the student correctly shifts the aggregate demand curve to the right and shows the new equilibrium output and price level and so earned 1 point. The student incorrectly concludes that the price level increase results in a higher real wage and so did not earn the point in part (c). In part (d) the student correctly identifies investment as the component of aggregate demand that changes, and thus earned the first point, but the student fails to provide a correct explanation for the rightward shift of the long-run aggregate supply curve and so did not earn the second point.

### Sample: 3C

**Score: 2**

In part (a) the student's graph correctly shows the equilibrium output and price level and the position of the long-run aggregate supply curve, and so earned both points. The student does not shift the aggregate demand curve and so did not earn the point in part (b). In part (c) the student incorrectly concludes that a decrease in the price level causes real wages to decrease and so lost 1 point. The student did not earn either point in part (d). First, the student fails to provide the component of aggregate demand that changes as a result of the purchase of container ships and equipment. Second, the student does not provide a correct explanation of the shift of the long-run aggregate supply curve.