

Suggested answer key.

Question 1

Scenario	Component of GDP affected: C, I, G, X-IM, or NC (not counted)	Effect on GDP (increase, decrease, or no change)
1. A farmer purchases a new tractor.	I	Increase
2. Businesses increase their current inventories.	I	Increase
3. You spend \$7 to attend a movie.	C	Increase
4. Worried about consumer confidence, Ford purchases less sheet metal for cars.	NC	No change
5. A retired man cashes his social security check from the government.	NC	No change
6. A French company purchases a one-year membership to PartyPeople.com, a U.S.-based company.	X - IM	Increase
7. A person pays \$450 a month to rent an apartment.	C	Increase
8. Worried about a recession, people begin saving more money.	C	Decrease
9. The U.S. government hires more workers for constructing a bridge.	G	Increase
10. Government closes school for the month of March.	G	Decrease

Question 2:

SOLUTION: Without more information, we can say nothing about inflation as measured by the GDP deflator and real GDP. Nominal GDP can increase because of changes in the price level and/or changes in real output. All that we know from the given information is that nominal GDP rose from 2011 to 2012 by 7%: this may mean that this economy is actually producing more, producing the same, or even producing less.

Question 3

3.1

As you can see, the table contains more data than is necessary to measure GDP using the expenditure approach. You will need to determine which parts of the table you need to use this approach. The necessary data is highlighted within the table.

Transfer Payments	\$ 54
Interest Income	\$ 186
Depreciation	\$ 36
Wages	\$ 67
Gross Private Investment (I)	\$ 124

Business Profits	\$ 274
Indirect Business Taxes	\$ 74
Rental Income	\$ 75
Net Exports (X-M)	\$ 18
Net Foreign Factor Income	\$ 12
Government Purchases (G)	\$ 156
Household Consumption (C)	\$ 304

Remember: $GDP = C + G + I + (X - M)$

C is the household consumption represented by \$304.

G is the government spending represented by \$156.

I is the gross private investment represented by \$124.

(X - M) is the net exports represented by \$18.

Therefore: $GDP = \$304 + \$156 + \$124 + \$18 = \$602$

3.2

According to the definition,

$$\begin{aligned} NI &= \text{Rental income} + \text{Business profits} + \text{Wage} + \text{Interest income} + \text{Business indirect tax} \\ &= 75 + 274 + 67 + 186 + 74 = 676 \end{aligned}$$

If you interpret transfer payments as government transfer, the item won't be counted at NI. But if you interpret it as business transfers, the item will be included. This depends on your reasoning. I will disregard the item, and interpret it as government transfers.

$$GNP = GDP + \text{Net Factor income from abroad}$$

Net factor income from abroad

= Payment to factors owned by Cocoland from abroad - Payment to foreign factor in Cocoland

= Net foreign factor income = 12

$$\text{GNP} = \text{GDP} + 12 \quad (1)$$

NNP = GNP – depreciation

$$= \text{GDP} + 12 - 36$$

$$= \text{GDP} - 24 \quad (2)$$

NNP = NI + statistical discrepancy

Using all above, we know that

$$\text{GDP} - 24 = \text{NI} + \text{Statistical discrepancy}$$

$$\text{GDP} = \text{NI} + 24 + \text{Statistical discrepancy}$$

$$= 676 + 24 + \text{Statistical discrepancy}$$

$$= 700 + \text{Statistical discrepancy} \quad (3)$$

Given the calculation, if the stat disc is equal to zero, the two GDP figures will be different. This normally occurs because of the errors in data collection. As a result, the statistical discrepancy must be used to adjust both GDP equals. If we use the GDP expenditure as the reference, the statistic discrepancy should be equal to “- 24”.

Question 4:

a. Calculate GDP using the final goods approach. Show work.

SOLUTION:

Final Goods: shrimp to households (\$ 10,000)
 + shrimp to foreigners (\$ 10,000)
 + fried shrimp (\$ 50,000) = \$ 70,000

b. Calculate GDP using the value-added approach. Show each step of your calculations.

SOLUTION:

Value Added: The value added at the shrimp farm is equal to \$30,000, which is the sum of the sales to the households, the foreigners, and the seafood restaurants. The value added at the seafood restaurant is \$40,000, which is the value of all sales (\$50,000) minus the cost of the goods entering the seafood restaurant “stage” (\$10,000). Thus, total value added is:

Value added in shrimp (\$ 30,000)+ Value added in fried shrimp (\$ 40,000) = \$ 70,000

c. Calculate GDP using the factor payment approach. Show each step of your calculations.

SOLUTION:

Factor Payment: GDP= wages + interest + rent + profits. At the shrimp farm there are only wages and profits of \$30,000; at the seafood restaurant there are only wages and profits of \$40,000. Thus: $GDP = 30,000 + 40,000 = \$70,000$.

Question 5

a. Calculate nominal GDP in each of the three years.

SOLUTION:

Nominal GDP is simply equal to the sum of the current year price $\times$ current year quantity of all the goods.

2006: $(7 \times 400) + (8 \times 225) + (10 \times 175) = 2,800 + 1,800 + 1,750 = \$ 6,350$.

2007: $(8 \times 550) + (7 \times 250) + (12 \times 275) = 4,400 + 1,750 + 3,300 = \$ 9,450$.

2008: $(9 \times 900) + (6 \times 275) + (15 \times 275) = 8,100 + 1,650 + 4,125 = \$ 13,875$.

b. Calculate Real GDP in each of the three years, using 2006 as the base year.

SOLUTION:

Real GDP is equal to the sum of the base year price $\times$ current year quantity of all the goods.

2006: $(7 \times 400) + (8 \times 225) + (10 \times 175) = 2,800 + 1,800 + 1,750 = \$ 6,350$.

2007: $(7 \times 550) + (8 \times 250) + (10 \times 275) = 3,850 + 2,000 + 2,750 = \$ 8,600$.

2008: $(7 \times 900) + (8 \times 275) + (10 \times 275) = 6,300 + 2,200 + 2,750 = \$ 11,250$.

c. Calculate the GDP deflator for each of the three years.

SOLUTION:

The GDP deflator is equal to **(Nominal GDP / Real GDP) $\times$ 100**.

2006: 100. Because 2006 is the base year we know the deflator has to equal 100 even without doing any calculations.

2007: $(9,450 / 8,600) \times 100 = 109.9$.

2008: $(13,875 / 11,250) \times 100 = 123.3$.

d. Calculate the rate of inflation for 2007 and 2008 using the GDP deflator as your price index. Assume that 2006 is still the base year.

SOLUTION:

Inflation is equal to the growth rate of the GDP deflator. The growth rate formula is:

$$\frac{\text{GDP deflator of Year}_2 - \text{GDP deflator of Year}_1}{\text{GDP deflator of Year}_1} \times 100$$

2007: $((109.9 - 100) / 100) \times 100 = 9.9\%$.

2008: $((123.3 - 109.9) / 109.9) \times 100 = 12.2\%$.

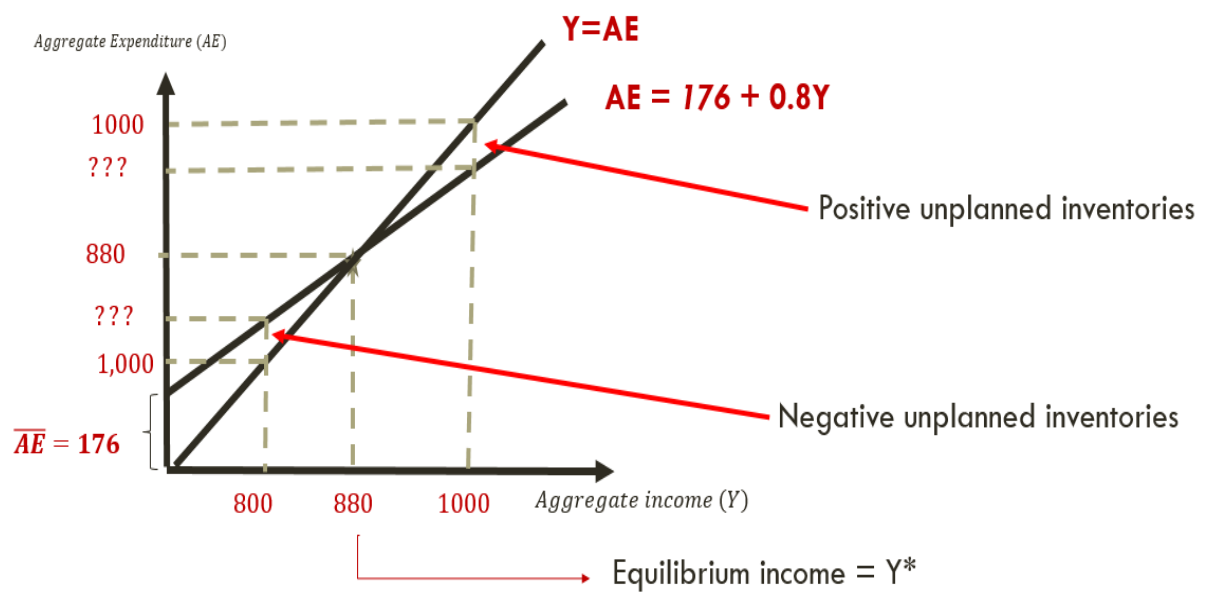
Question 6

6.1)

$$AE = 176 + 0.8 Y$$

$$Y^* = 880$$

6.2)



6.3

$$AE = 172 + 0.8 Y$$

$$Y^* (\text{new}) = 860$$