Answers to Text Questions and Problems in Chapter 8

Answers to Review Questions

1. The key assumption is that, in the short run, firms meet demand at pre-set prices. The fact that firms produce to meet demand implies that changes in demand affect output in the short run.

2. Many examples are possible. Goods that are standardized and are bought and sold in large quantities, such as wheat or other commodities, tend to have rapidly adjusting prices, for the reason that the benefits of setting up active auction markets for such goods usually exceed the costs. Goods such as clothing items, which are not standardized (they vary in size, colour, style) and which are usually sold in retail stores one by one, tend to have prices that are changed less frequently.

3. Planned aggregate expenditure is total planned spending on final goods and services. It includes consumption spending, investment spending, government purchases of goods and services, and net exports (exports less imports). Changes in output are reflected in changes in income received by producers, which in turn affects consumption spending (through the consumption function). As consumption is part of aggregate expenditure, changes in output lead to changes in aggregate expenditure.

4. Planned spending includes planned additions to inventories to firms. If firms’ actual sales differ from what they planned, their additions to inventories will likewise differ from what was planned, and actual spending will differ from planned spending. For example, suppose that a firm planned to produce 100 units, sell 90 units to the public, and add 10 units to its inventory. But in fact the firm sells only 80 units and thus must add 20 units to inventory. The firm’s planned inventory investment (a component of investment and thus total spending) was 10 units, but its actual inventory investment was 20 units. So the firm’s actual investment spending (inclusive of inventory investment) is greater than it planned. On the other hand, if the firm sold all 100 units, it would add nothing to inventory, and its actual investment (including inventory investment) would be less than planned.

5. See Figure 8.1. Consumption, \( C \), is on the vertical axis and disposable income, \( Y–T \), is on the horizontal axis. A movement from left to right along the graph of the consumption function indicates an increase in consumption as disposable income increases. A parallel upward shift of the consumption function indicates that people are consuming more at any given level of disposable income, i.e., some factor other than a change in disposable income is stimulating consumption.

6. See Figure 8.3. The 45-degree line captures the definition of short-run equilibrium output, \( Y = PAE \). Short-run equilibrium output must lie on that line. The expenditure line shows how planned aggregate expenditure depends on output. Because increased output raises disposable income, which in turn increases consumption and aggregate expenditure, the expenditure line is upward sloping. Autonomous expenditure is given by the intercept of the expenditure line, the marginal propensity to consume equals the slope of the expenditure line, and short-run equilibrium output is the point on the horizontal axis corresponding to the intersection of the expenditure line and the \( Y = PAE \) line. To find induced expenditure, draw a horizontal line from the intersection of \( Y = PAE \) and the expenditure line to the vertical axis. The difference between the resulting point on the vertical axis (which equals total aggregate expenditure) and the intercept of the expenditure line (which equals autonomous expenditure) gives induced expenditure.
7. The income-expenditure multiplier tells us by how much short-run equilibrium output changes if autonomous expenditure increases by one unit. The multiplier is greater than one because a one-unit increase in autonomous expenditure not only directly increases output by one unit, it also increases producers’ incomes by one unit. The increase in income leads to further spending on the part of producers, which raises income of other producers and increases their spending. This multiple-round process of spending and income creation leads to a final increase in output that is greater than the one-unit initial impact.

8. The increase in government purchases raises autonomous expenditure by 50 units. The tax cut raises disposable income by 50 units, which also stimulates planned expenditure by raising consumption spending. However, the tax cut raises autonomous expenditure by only 50 units times the marginal propensity to consume (MPC); since the MPC is less than one, the tax cut will increase autonomous expenditure by less than 50 units. Thus the increase in government purchases is predicted to have the greater impact on planned aggregate expenditure.

9. Using fiscal policy is more complex than suggested because fiscal policy may affect potential output as well as planned spending; it affects more than just actual and potential GDP; it may lead to a budget deficit; it takes time to implement; there is a recognition lag before it is determined that a policy change is appropriate; and it can also involve automatic stabilizers.

10. The larger the multiplier, the smaller a change in government purchases can be in order to achieve the required change in output. Similarly, if the multiplier is small, government purchases must rise by more in order to close a given recessionary gap. For example, as in Figure 8.6, if the recessionary gap is equal to 50 and the multiplier is 5, government purchases must rise by 10; but if the multiplier is only 2, government purchases must rise by 25.

Answers to Problems

1. Acme’s planned investment in every case is $1,500,000 (its planned expenditure on new equipment plus zero planned increase in inventories).
   a. If Acme sells $3,850,000 worth of goods, it has unplanned inventory investment of $150,000 and total actual investment of $1,650,000.
   b. If Acme sells $4,000,000 worth of goods as it planned, its actual investment of $1,500,000 equals its planned investment.
   c. If Acme sells $4,200,000 worth of goods it must draw down $200,000 worth of goods from its existing inventory, implying that inventory investment is –$200,000. Acme’s actual investment in this case is $1,500,000 – $200,000 = $1,300,000. Output equals short-run equilibrium output in case b, where planned spending and actual spending are equal.
2a. Consumption and disposable income (before-tax income less taxes paid) are as follows:

<table>
<thead>
<tr>
<th>Disposable income</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>22,000</td>
<td>20,000</td>
</tr>
<tr>
<td>23,500</td>
<td>21,350</td>
</tr>
<tr>
<td>24,300</td>
<td>22,070</td>
</tr>
<tr>
<td>26,000</td>
<td>23,600</td>
</tr>
</tbody>
</table>

What is the marginal propensity to consume? If disposable income increases by from 22,000 to 23,500, a rise of 1500, consumption rises by 1350. Since 1350/1500 = 0.9, it looks like the $MPC$ is 0.9. Confirming this, we see that if disposable income rises by another 800 (24,300 – 23,500), consumption rises by 720 (22,070 – 21,350), which is 0.9 × 800. Similarly, if disposable income rises by yet another 1700 (26,000 – 24,300), consumption rises by 1530 = 0.9 × 1700. So $c = 0.9$. We can also find the intercept of the consumption function, $\overline{C}$. Since the $MPC$ is 0.9, we know the consumption function can be expressed as $C = \overline{C} + 0.9(Y – T)$. To find $\overline{C}$, plug into the equation any of the numerical combinations of consumption and disposable income given above. For example, if we set $C = 20,000$ and $Y – T = 22,000$, we get $20,000 = \overline{C} + 0.9(22,000)$, which implies $\overline{C} = 200$. So the consumption function for the Simpsons is $C = 200 + 0.9(Y – T)$.

b. From the consumption function derived in part a, setting $Y = 32,000$ and $T = 5000$, we find $C = 200 + 0.9(27,000) = 24,500$.

c. The graph shifts upward by 1000 at each level of disposable income (the vertical intercept, $\overline{C}$, rises from 200 to 1200). The $MPC$ is unaffected, because the increase in consumption is the same at each level of disposable income, so that the graph makes a parallel upward shift.

3a. $PAE = C + I^p + G + NX$

$PAE = 1800 + 0.6(Y – 1500) + 900 + 1500 + 100$

$PAE = 3400 + 0.6Y$

b. Autonomous expenditure is 3400, induced expenditure is 0.6$Y$. 
4a. Numerical determination of short-run equilibrium output

<table>
<thead>
<tr>
<th>Output Y</th>
<th>Planned aggregate expenditure</th>
<th>$Y - PAE$</th>
<th>$Y = PAE?$</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200</td>
<td>8320</td>
<td>-120</td>
<td>No</td>
</tr>
<tr>
<td>8300</td>
<td>8380</td>
<td>-80</td>
<td>No</td>
</tr>
<tr>
<td>8400</td>
<td>8440</td>
<td>-40</td>
<td>No</td>
</tr>
<tr>
<td>8500</td>
<td>8500</td>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>8600</td>
<td>8560</td>
<td>40</td>
<td>No</td>
</tr>
<tr>
<td>8700</td>
<td>8620</td>
<td>80</td>
<td>No</td>
</tr>
<tr>
<td>8800</td>
<td>8680</td>
<td>120</td>
<td>No</td>
</tr>
<tr>
<td>8900</td>
<td>8740</td>
<td>160</td>
<td>No</td>
</tr>
<tr>
<td>9000</td>
<td>8800</td>
<td>200</td>
<td>No</td>
</tr>
</tbody>
</table>

So short-run equilibrium output is 8500.

b.

\[
PAE = C + I^p + G + NX = 3400 + 0.6Y
\]

Now use the condition $Y = PAE$ to find short-run equilibrium output:

\[
Y = 3500 + 0.6Y
\]

\[
0.4Y = 3500
\]

\[
Y = 8750
\]

c. Potential output $Y^*$ is 9000 (see problem 3), so the output gap, $Y^* - Y$, equals $9000 - 8500 = 500$. As a percentage of potential output, the gap is $500/9000 = 5.6\%$. By Okun’s Law, cyclical unemployment is half of this, or 2.8\%. Since the natural rate is 4\%, the actual unemployment rate is 4\% + 2.8\% = 6.8\%.

5. For the economy in problem 3, we have $PAE = 3400 + 0.6Y$ (see part a of problem 3). To find short-run equilibrium, we use the condition $Y = PAE$. Substituting for $PAE$ and solving, we find output $Y = 8500$ (see part b of problem 4). The three parts of the problem ask us to re-solve for short-run equilibrium output under different assumptions.

a. First find the relationship of aggregate expenditure to output:

\[
PAE = C + I^p + G + NX
\]

\[
PAE = 1800 + 0.6(Y - 1500) + 900 + 1600 + 100
\]

\[
PAE = 3500 + 0.6Y
\]

Now use the condition $Y = PAE$ to find short-run equilibrium output:

\[
Y = 3500 + 0.6Y
\]

\[
0.4Y = 3500
\]

\[
Y = 8750
\]
b. We can use the same approach to find the effect of a decrease in tax collections:

\[
PAE = 1800 + 0.6(Y-1400) + 900 + 1500 + 100
\]

\[
PAE = 3460 + 0.6Y
\]

Now use the condition \( Y = PAE \):

\[
Y = 3460 + 0.6Y
0.4Y = 3460
Y = 8650
\]

c. Finally, for a decrease in planned investment spending:

\[
PAE = 1800 + 0.6(Y-1500) + 800 + 1500 + 100
\]

\[
PAE = 3300 + 0.6Y
\]

Now use the condition \( Y = PAE \):

\[
Y = 3300 + 0.6Y
0.4Y = 3300
Y = 8250
\]

In part a, an increase in autonomous expenditure of 100 led to an increase in short-run equilibrium output of 250. In part b, an increase in autonomous expenditure of 60 (equal to the \( MPC \), 0.6, times the decrease in taxes, 100) led to an increase in output of 150. Finally in part c, a decrease in autonomous expenditure of 100 led to a decrease in output of 250. All three examples demonstrate that the multiplier, equal to the change in output per 1-unit change in autonomous expenditure, is 2.5 for this economy. We can verify this also by the formula for the multiplier, \( 1/(1-c) \). In this economy, \( c = 0.6 \), so the multiplier is \( 1/(1-0.6) = 1/0.4 = 2.5 \).

6. The relationship between planned aggregate expenditure and output is given by

\[
PAE = C + I^p + G + NX
\]

\[
PAE = 3000 + 0.5(Y-2000) + 1500 + 2500 + 200
\]

\[
PAE = 6200 + 0.5Y
\]

Autonomous expenditure equals 6200, the part of aggregate expenditure that does not depend on output. To find short-run equilibrium output, use the equation \( Y = PAE \) and solve for \( Y \):

\[
Y = 6200 + 0.5Y
0.5Y = 6200
Y = 12,400
\]

Short-run equilibrium output (12,400) exceeds potential output (12,000) by 400, so the output gap is -400. The multiplier can be found by the formula multiplier = \( 1/(1-c) = 1/(1-0.5) = 2 \). Alternatively, imagine that autonomous expenditure rises from 6200 to 6300. Now the equation \( Y = PAE \) becomes \( Y = 6300 + 0.5Y \). Solving for output yields \( Y = 12,600 \), an increase of 200 over the solution found above. We have shown that an increase in autonomous expenditure of 100 raises short-run equilibrium output by 200. Therefore the multiplier must equal 2. As the multiplier is 2, to eliminate the output gap of -400, autonomous expenditure would have to change by -200, that is, autonomous expenditure would have to fall. You can verify that if autonomous expenditure falls from 6200 to 6000, then short-run equilibrium output equals 12,000 and the output gap is eliminated.

7a. The first step is to find an equation relating aggregate expenditure to output:

\[
PAE = C + I^p + G + NX
\]

\[
PAE = 3000 + 0.5(Y-2000) + 1500 + 2500 + 0
\]

\[
PAE = 6000 + 0.5Y
\]

The second step is to apply the definition of short-run equilibrium output, \( Y = PAE \):

\[
Y = 6000 + 0.5Y
0.5Y = 6000
Y = 12,000
\]
b. An increase of $\overline{NX}$ by 100 implies that autonomous expenditure rises by 100. So (as you can verify directly by substituting for each component of aggregate expenditure in the equation $PAE = C + I^p + G + NX$), the equation for aggregate expenditure becomes $PAE = 6100 + 0.5Y$. Solving for short-run equilibrium output:

\[
\begin{align*}
Y &= PAE \\
Y &= 6100 + 0.5Y \\
0.5Y &= 6100 \\
Y &= 12,200
\end{align*}
\]

So the increase in net exports of 100 has increased output by 200.

c. In this case autonomous expenditure falls by 100, so we have $PAE = 5900 + 0.5Y$

Solving for output:

\[
\begin{align*}
Y &= PAE \\
Y &= 5900 + 0.5Y \\
0.5Y &= 5900 \\
Y &= 11,800
\end{align*}
\]

So a decline in net exports lowers output.

d. The example shows that a weak economy in one country, by reducing that country’s imports from a second country, can create economic weakness in the second country as well. Similarly, an expansion that increases a country’s purchases of foreign products strengthens the economies of its trade partners.

8. We can solve the model in the usual way. First, find the relationship of aggregate expenditure to output, noting that $I^p = 300 + 0.1Y$:

\[
\begin{align*}
PAE &= C + I^p + G + NX \\
PAE &= 3000 + 0.5(Y-2000) + 300 + 0.1Y + 2500 + 200 \\
PAE &= 5000 + 0.6Y
\end{align*}
\]

From this equation we see that autonomous expenditure (the part of aggregate expenditure that does not depend on output) equals 5000. To find short-run equilibrium output, we use the condition $Y = PAE$:

\[
\begin{align*}
Y &= 5000 + 0.6Y \\
0.4Y &= 5000 \\
Y &= 12,500
\end{align*}
\]

As short-run equilibrium output $Y = 12,500$, the output gap $Y^* - Y = 12,000 - 12,500 = -500$, that is, there is an expansionary gap. To find the multiplier, let’s ask what happens to output if autonomous expenditure increases by (say) 100. Then the equation for aggregate expenditure is $PAE = 5100 + 0.6Y$.

Using the condition $Y = PAE$ to solve for output:

\[
\begin{align*}
Y &= 5100 + 0.6Y \\
0.4Y &= 5100 \\
Y &= 12,750
\end{align*}
\]

An increase of 100 in autonomous expenditure raises short-run equilibrium output by 250. Therefore the multiplier is $250/100 = 2.5$. 
9a. Solve for short-run equilibrium output the usual way. First, find the relationship of aggregate expenditure to output:

\[ PAE = C + I + G + NX \]
\[ PAE = 40 + 0.8(Y - 150) + 70 + 120 + 10 \]
\[ PAE = 120 + 0.8Y \]

Second, use the condition \( Y = PAE \) to solve for short-run equilibrium output:

\[ Y = 120 + 0.8Y \]
\[ 0.2Y = 120 \]
\[ Y = 600 \]

The output gap is \( Y^* - Y = 580 - 600 = -20 \), so there is an expansionary gap of 20. To answer the question about the effects of fiscal policy, it helps to know the multiplier for this economy. The multiplier can be found by the formula \( 1/(1-c) = 1/1-0.8 = 5 \). Alternatively, imagine increasing autonomous expenditure by some amount, say 100, and re-solve for short-run equilibrium output. You will find that the change in output divided by the assumed change in autonomous expenditure for this economy equals 5. Now we can find the appropriate fiscal policies to eliminate the output gap. Because actual output exceeds potential output by 20, and the multiplier is 5, a decrease of 4 in government purchases (from 120 to 116) will eliminate the output gap. You can verify this directly by setting \( \bar{G} = 116 \) and re-solving for short-run equilibrium output. For the case of a tax change we have to be careful. A change in taxes of \( \Delta T \) does not change autonomous expenditure by \( \Delta T \), because consumers do not spend 100% of any tax cut (or reduce spending by 100% of any tax increase). A change in taxes of \( \Delta T \) instead changes autonomous expenditure by \( c\Delta T \), where \( c \) is the marginal propensity to consume out of disposable income. We saw in the case of government spending that eliminating the output gap requires reducing autonomous expenditure by 4. To reduce autonomous expenditure by 4 via a tax change, increase taxes by 5. Since the \( MPC \) is 0.8 in this example, a tax increase of 5 will lead consumers to reduce their spending by 4, as desired. This result can be verified directly by setting \( \bar{T} = 155 \) and solving for short-run equilibrium output. The effects of either a reduction of government purchases by 4, or an increase in taxes of 5, are shown in the Keynesian cross diagram below:

b. If potential output is 630, then the output gap is \( Y^* - Y = 630 - 600 = 30 \), that is, there is a recessionary gap of 30. As the multiplier is 5, this gap can be eliminated by raising government purchases by 6. Alternatively, cut taxes by \( 6/0.8 = 7.5 \). Because the \( MPC \) is 0.8, a cut in taxes of 7.5 will also stimulate autonomous expenditure by 6 and output by \( 6 \times 5 = 30 \). The Keynesian cross diagram in this case shows the expenditure line rising, rather than falling, to restore full employment (\( Y = Y^* \)).
10a. We solve for short-run equilibrium output in the usual two steps, except that we keep the equations in general algebraic form rather than in numerical form. The first step is to find the relationship of aggregate expenditure to output:

\[ \text{PAE} = C + I^p + G + NX \]
\[ \text{PAE} = \overline{C} + c(Y - T) + I^p + G + NX \]
\[ \text{PAE} = \overline{C} + c(Y - tY) + I^p + G + NX \]
\[ \text{PAE} = \overline{C} + I + \overline{G} + \overline{NX} + c(1-t)Y \]

Notice that, in this model, autonomous expenditure is \( \overline{C} + I + \overline{G} + \overline{NX} \) and induced expenditure is \( c(1-t)Y \).

The second step is to apply the equation \( Y = \text{PAE} \) and solve for output:

\[ Y = \text{PAE} \]
\[ Y = \overline{C} + I + \overline{G} + \overline{NX} + c(1-t)Y \]
\[ Y[1-c(1-t)] = \overline{C} + I + \overline{G} + \overline{NX} \]
\[ Y = \frac{1}{1-c(1-t)}(\overline{C} + I + \overline{G} + \overline{NX}) \]

The last line above gives an algebraic expression for short-run equilibrium output in the model in which taxes are proportional to output.

b. From the expression for short-run equilibrium output in part a, we can see that a one unit increase in autonomous expenditure, \( \overline{C} + I + \overline{G} + \overline{NX} \), raises output \( Y \) by \( 1/c(1-t) \) units, so \( 1/c(1-t) \) is the multiplier. This multiplier is smaller than the standard multiplier, \( 1/c \), as can be verified algebraically or by trying numerical values for \( c \) and \( t \).

c. Short-run equilibrium output equals the multiplier times autonomous expenditure (see part a). For given fluctuations in autonomous expenditure, the smaller is the multiplier, the less output will fluctuate. So changes in the economy that reduce the multiplier, such as introducing taxes that are proportional to output, tend to stabilize output (for given fluctuations in autonomous expenditure).

d. Plugging these values into the expression for output in part a, we get

\[ Y = \frac{1}{1-0.8(1-0.25)}(500 + 1500 + 2000 + 0) \]
\[ Y = \frac{1}{1-0.6}(4000) \]
\[ Y = 2.5(4000) = 10,000 \]

The multiplier is 1/1-0.8(1-0.25) = 1/1-0.8(0.75) = 1/1-0.6 = 1/0.4 = 2.5.

11. First, find the relationship of aggregate expenditure to output:

\[ \text{PAE} = C + I^p + G + NX \]
\[ \text{PAE} = 500 + 0.8(1-0.25)Y + 1500 + 2000 + 5000 - (1000 + 0.4Y) \]
\[ \text{PAE} = 8000 + 0.2Y \]

To find short-run equilibrium output, we use the condition \( Y = \text{PAE} \):

\[ Y = 8000 + 0.2Y \]
\[ 0.2Y = 8000 \]
\[ Y = 40,000 \]

Suppose that autonomous consumption rises by 100. \( \text{PAE} \) is now equal to 8100 + 0.2Y, and equilibrium output is now \( Y = 40,500 \). So an increase in aggregate expenditure by 100 causes output to rise by 500.

The multiplier is thus equal to 5.
Sample Homework Assignment

1a. Fill in the missing information in the table below.

<table>
<thead>
<tr>
<th>Disposable income</th>
<th>Consumption</th>
<th>MPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>12,000</td>
<td>11,500</td>
<td>a.</td>
</tr>
<tr>
<td>14,000</td>
<td>13,000</td>
<td>b.</td>
</tr>
<tr>
<td>16,000</td>
<td>c. 0.8</td>
<td>d.</td>
</tr>
<tr>
<td></td>
<td>16,200</td>
<td>0.8</td>
</tr>
</tbody>
</table>

2. Suppose that the following equations describe the economy of the country of Iota.
   \[ C = 500 + 0.8 \left( Y - T \right) \]
   \[ I = 200 \]
   \[ G = 300 \]
   \[ NX = 50 \]
   \[ T = 200 \]
   \[ Y^* = 5000 \]
   Use this information to find each of the following:
   a. Autonomous expenditure.
   b. The multiplier.
   c. Short-run equilibrium output.
   d. The output gap.

3. By how much would aggregate expenditure have to change to eliminate the output gap for Iota in question 2 above?

Multiple Choice Quiz

1. The costs of changing prices are called
   a. price costs.
   b. inflation costs.
   c. sign costs.
   d. menu costs.
   e. sale costs.

   a. the First World War.
   b. the Second World War.
   c. the Great Depression.
   d. Marxist economics.
   e. inflation in Great Britain.

3. Total planned spending on final goods and services is called
   a. total spending.
   b. total consumption.
   c. induced aggregate expenditure.
   d. aggregate consumption.
   e. planned aggregate expenditure.
4. A firm’s actual investment will exceed its planned investment when
   a. it sells less than it planned.
   b. It sells more than it planned.
   c. interest rates rise.
   d. interest rates fall.
   e. the economy experiences an unexpected expansion.

5. The largest component of planned aggregate expenditure is
   a. consumption.
   b. investment.
   c. government purchases.
   d. exports.
   e. imports.

6. The marginal propensity to consume is
   a. assumed to be constant in the basic Keynesian model.
   b. the amount of consumption for any given level of disposable income.
   c. the additional consumption when disposable income rises by $1.
   d. the level of consumption divided by the level of disposable income.
   e. equal to consumers’ actual spending.

7. The value of the $MPC$ is assumed to be
   a. less than 1.
   b. greater than 1.
   c. less than 0.
   d. equal to 1.
   e. constant.

8. A value that is determined outside a model is called
   a. endogenous.
   b. induced.
   c. autonomous.
   d. aggregate.
   e. external.

9. The objective of stabilization policies is to
   a. affect aggregate supply.
   b. eliminate output gaps.
   c. increase potential GDP.
   d. keep inflation constant.
   e. cause business cycles.

10. Which of the following is not an example of an automatic stabilizer?
    a. Income taxes.
    b. Unemployment insurance.
    c. Social assistance payments.
    d. Transfer payments.
    e. Interest payments on the national debt.
Problems/Short Answer

1. If your disposable income increases by $2000 and, as a result, you spend an additional $1800, what is your marginal propensity to consume? Was your change in spending autonomous or induced?

2. Suppose that the following equations describe the economy of the country of Gamma.
   
   \[
   C = 400 + 0.4(Y - T)
   \]
   \[
   I^p = 200
   \]
   \[
   G = 200
   \]
   \[
   NX = 40
   \]
   \[
   T = 0
   \]
   \[
   Y^* = 1500
   \]

   Use this information to find each of the following:
   a. Autonomous expenditure.
   b. The multiplier.
   c. Short-run equilibrium output.
   d. The output gap.

Answer Key to Extra Questions in Instructor’s Manual

Sample Homework Assignment

1a. 0.75.
b. 0.75.
c. $14,600.
d. $18,000.

2a. 1050.
b. 1/0.2 = 5.
c. \[1050 + 0.8(Y - 200) = Y\]
   \[890 + 0.8Y = Y\]
   \[890 = 0.2Y\]
   \[4450 = Y\]

3. Planned aggregate expenditure would have to change by:
   \[X \text{ (multiplier)} = 550\]
   \[X \text{ (5)} = 550\]
   \[X = 110\]
Multiple Choice

1.  d
2.  c
3.  e
4.  a
5.  a
6.  c
7.  a
8.  c
9.  b
10.  e

Problems/Short Answer

1.  0.9; induced.

2a.  840.
b.  \(1/0.4 = 2.5\).
c.  \(840 + 0.4Y = Y\)
   \[1400 = Y\]
d.  Output gap = 1500 – 1400 = 100.