1. The economy of Northland is in short-run equilibrium with an actual unemployment rate of 7% and an actual inflation rate of 1%. The natural unemployment rate in Northland is 5%.

   (a) Using the relevant numerical values given, draw a correctly labeled graph of the short-run and long-run Phillips curves. Label the current short-run equilibrium point as X. Plot the relevant numerical values provided on the graph.

   (b) Is the expected inflation rate greater than, less than, or equal to 1% ? Explain.

   (c) Assume the marginal propensity to consume is 0.9.

   - (i) If the government decreases income taxes by $20 billion, calculate the maximum change in aggregate demand. Show your work.
   - (ii) If instead the government increases spending by $20 billion, calculate the maximum change in aggregate demand. Show your work.

   (d) On your graph in part (a), show a possible new short-run equilibrium point labeled Z that would result if the government increases spending and there is no change in inflationary expectations.

   (e) How would an increase in unemployment compensation affect aggregate demand in the short run? Explain.

   (f) Assume instead the government takes none of the preceding policy actions. (Northland is still in short-run equilibrium; the actual unemployment rate is 7%, the actual inflation rate is 1%, and the natural unemployment rate is 5%.) What will happen to each of the following in the long run?

   - (i) The short-run aggregate supply curve. Explain.
   - (ii) The short-run Phillips curve
   - (iii) The actual unemployment rate

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

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2. The United States and South Africa are trading partners with flexible exchange rates, and the United States current account balance with South Africa is zero.

(a) Assume real income in the United States increases while real income in South Africa remains the same. Will United States net exports increase, decrease, or remain unchanged? Explain.

(b) Based on your answer to part (a), what will happen to each of the following?

(i) The capital and financial account balance in the United States
(ii) Actual unemployment in South Africa in the short run. Explain.

(c) The currency of the United States is the dollar (USD), and the currency of South Africa is the rand (ZAR). Draw a correctly labeled graph of the foreign exchange market for the rand and show the effect of the increase in real income in the United States on the international value of the rand.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

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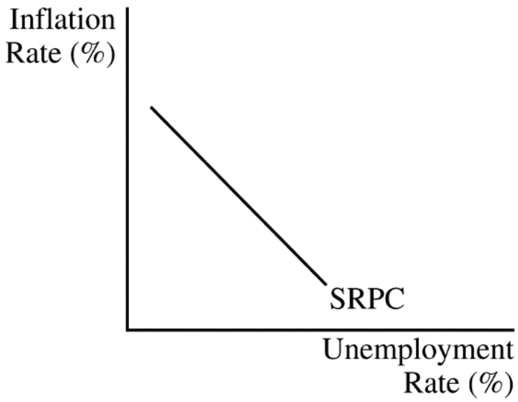
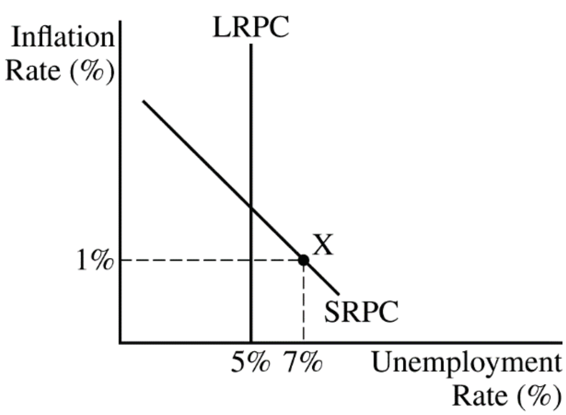
Question 1: Long — 10 points

(a) Draw a correctly labeled graph of the short-run Phillips curve (SRPC). **1 point**



For the second point, the graph must include a vertical long-run Phillips curve (LRPC) at the natural rate of unemployment (5%) and must include point X on the SRPC to the right of the LRPC at the actual unemployment rate (7%) and the actual inflation rate (1%). **1 point**



Total for part (a) — 2 points

(b) State that the expected inflation rate is greater than 1% and explain that the actual unemployment rate (7%) is greater than the natural rate of unemployment (5%); or explain that the economy is in a recession. **1 point**

(c) (i) Calculate the maximum change in aggregate demand as $180 billion and show your work. **1 point**

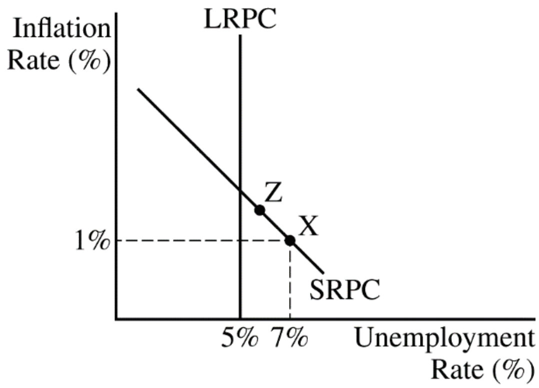
$$\text{Maximum } \Delta \text{ in AD} = -\$20 \text{ billion} \times \frac{-0.9}{1-0.9} = -\$20 \text{ billion} \times -9 = \$180 \text{ billion}$$

(ii) Calculate the maximum change in aggregate demand as $200 billion and show your work. **1 point**

$$\text{Maximum } \Delta \text{ in AD} = \$20 \text{ billion} \times \frac{1}{1-0.9} = \$20 \text{ billion} \times 10 = \$200 \text{ billion}$$

Total for part (c) — 2 points

(d)	On the graph from part (a), show point Z on the SRPC to the left of point X.	**1 point**



(e)	State that aggregate demand would increase and explain that the increase in disposable income would increase consumption spending.	**1 point**
(f) (i)	State that the short-run aggregate supply curve will shift to the right and explain that input prices (e.g., nominal wages) and/or inflationary expectations will decrease.	**1 point**
(ii)	State that the short-run Phillips curve will shift to the left.	**1 point**
(iii)	State that the actual unemployment rate will decrease.	**1 point**
	Total for part (f)	**3 points**
	Total for question 1	**10 points**