1) Assume that GDP (Y) is 5000. Consumption (C) is given by the equation 
\[ C = 1000 + 0.3(Y-T) \]. Investment (I) is given by the equation \[ I = 1500 - 50r \], where r is the real interest rate in percent. Taxes (T) are 1000 and government spending (G) is 1500.

   a. What are the equilibrium values of C, I, and r?
   b. What are values of private saving, public saving, and national saving?
   c. Now assume there is a technological innovation that makes business want to invest more. It raises the investment equation to \[ I = 2000 - 50r \]. What are the new equilibrium values of C, I, and r?
   d. What are the new values of private saving, public saving, and national saving?

2) Suppose a government moves to reduce a budget deficit. Using the long-run model of the economy developed in Chapter 3, graphically illustrate the impact of reducing a government’s budget deficit by reducing government purchases. Be sure to label the axes, the curves, the initial equilibrium values, the direction that the curves shift, and the terminal equilibrium values.

State in words what happens to the real interest rate, national saving, investment, consumption, and output.

3) Suppose a government education program succeeds in getting households to save more. Using the long-run model of the economy developed in Chapter 3, graphically illustrate the impact of the higher saving rate by households. Be sure to label the axes, the curves, the initial equilibrium values, the direction that the curves shift, and the terminal equilibrium values.

State in words what happens to the real interest rate, national saving, investment, consumption, and output.

4) Suppose a government decides to reduce spending and (lump-sum) income taxes BY THE SAME AMOUNT. Using the long-run model of the economy developed in Chapter 3, graphically illustrate the impact of the equal reductions in spending and taxes. Be sure to label the axes, the curves, the initial equilibrium values, the direction that the curves shift, and the terminal equilibrium values.

State in words what happens to the real interest rate, national saving, investment, consumption, and output.