1. An economy is situated near a volcano, but otherwise it can be characterized as a Solow economy with exogenous population growth rate \( (n) \), depreciation rate \( (d) \) and exogenous saving rate \( (s) \). The volcano erupted one day and after it had settled, half the capital stock was destroyed. Many in the population (worker) became fearful and left the country. The government, fearful that the economy would collapse if everyone left, prohibited out-migration after only one period.

   a. Draw a Solow growth model diagram showing the initial steady-state before the volcano eruption. Carefully label your diagram completely.
   b. Show in the diagram the position of the economy after the destruction of the capital stock and the one-time out-migration of worker.
   c. Does this economy arrive at a different steady-state than the original one? Why or why not? If the new steady-state is different from the initial one, is it higher or lower? Again, provide explanations.

2. Do problem 7, chapter 6 (same in 3/e). For part (c), illustrate with a diagram.

3. Do problem 2, Chapter 8 (same problem in 3/e).

   Additionally, for the case where the consumer is initially a borrower, show in the diagram the case where the positive income effect from an increase in future income is greater than the negative income effort of an increase in \( r \).