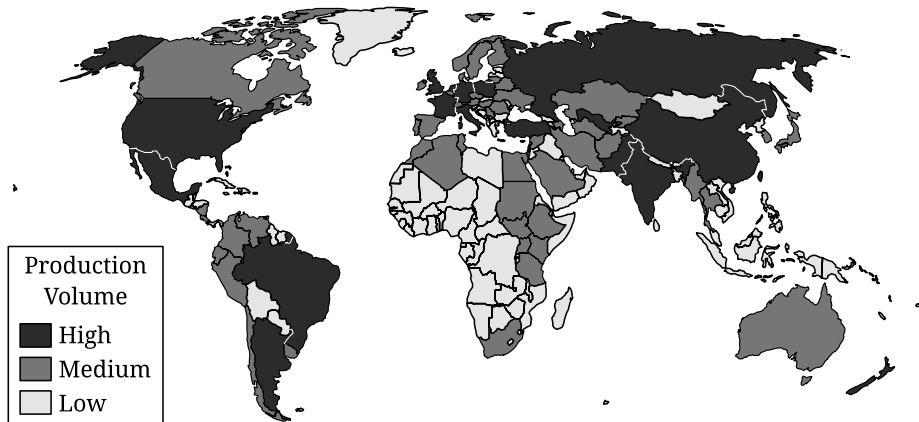
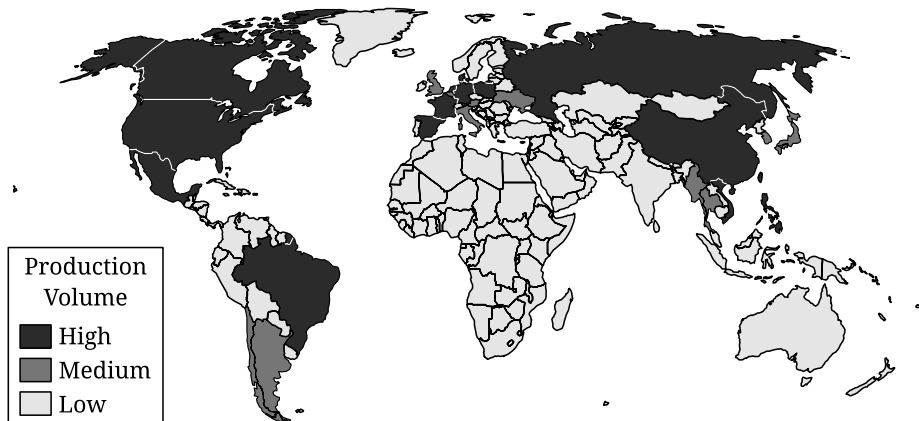


**Map 1: Cow's Milk Production, 2018**

Source: Food and Agriculture Organization

**Map 2: Pork Production, 2018**

Source: Food and Agriculture Organization

3. The global production of cow's milk and pork results in distinctive spatial patterns of contemporary agriculture and land use.

Respond to parts A, B, C, D, E, F, and G.

- Identify an example of a culture trait.
- Describe the spatial pattern of cow's milk production in Africa, shown in Map 1.
- Based on Map 1 and Map 2, compare the spatial patterns of cow's milk production and pork production in Asia. (Response must include both maps in the comparison.)
- Describe one environmental effect of agricultural land use such as commercial animal farms.
- Explain how the globalization of agriculture may affect local culture traits.
- Explain why regions of agricultural production may become interdependent.
- Explain how domesticated animals such as pigs spatially diffused to create the spatial pattern shown on Map 2.

**STOP**  
**END OF EXAM**

HUMAN GEOGRAPHY

SECTION II

Time—1 hour and 15 minutes

3 Questions

**Directions:** You have 1 hour and 15 minutes to answer all three of the following questions. It is recommended that you spend approximately one-third of your time (25 minutes) on each question. It is suggested that you take up to 5 minutes of this time to plan and outline each answer. You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

Question 1

1. The availability of food in the context of a growing world population is influenced by many social, environmental, and economic factors.
- A. Define the concept of carrying capacity.

B. Describe ONE way that humans have altered the environmental sustainability of agricultural lands.

C. Explain how transportation technology has increased economies of scale in the agricultural sector of less developed countries.

D. Explain a likely negative economic outcome of Green Revolution agricultural practices on rural communities.

E. Explain ONE weakness of Malthusian theory in predicting the relationship between food production and population growth in contemporary society.

F. Explain how surplus food production has changed the global market for local agricultural products.

G. Explain the degree to which Green Revolution agricultural practices were effective in reducing hunger in less developed countries. (Response must indicate the degree [low, moderate, high] and provide an explanation.)

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.

Question 2

PER CAPITA PRODUCTION OF STAPLE FOOD CROPS  
IN HEARTH-OF-DOMESTICATION COUNTRIES

| Country | Corn (maize)<br>(pounds per capita) | Potato<br>(pounds per capita) | Rice<br>(pounds per capita) | Yam<br>(pounds per capita)   | Cassava<br>(manioc or yuca)<br>(pounds per capita) |
|---------|-------------------------------------|-------------------------------|-----------------------------|------------------------------|----------------------------------------------------|
|         | Hearth: Mexico                      | Hearth: Peru                  | Hearths:<br>China and Mali  | Hearth:<br>Niger River basin | Hearth:<br>Amazon River basin                      |
| Brazil  | 1,056                               | 39                            | 108                         | 3                            | 183                                                |
| China   | 412                                 | 145                           | 333                         | 0                            | 52                                                 |
| Mexico  | 471                                 | 31                            | 4                           | 0                            | 0                                                  |
| Nigeria | 121                                 | 15                            | 93                          | 549                          | 618                                                |
| Peru    | 107                                 | 362                           | 216                         | 0                            | 13                                                 |

Source: Food and Agriculture Organization of the United Nations

2. Staple food crops provide most of the carbohydrates in people’s diets, and some staples are also used as animal feed or in the distillation of ethanol. Cassava is a root crop (tuber) that is the source of farinha, tapioca, and the pearls in bubble tea.
- A. Describe the concept of an early hearth of domestication.

B. Identify the crop listed in the table that has diffused the least from its hearth of domestication to the countries listed in the table.

C. Explain how food preferences can be a culture trait.

D. Explain how the Columbian Exchange contributed to a crop’s diffusion beyond its hearth of domestication.

E. Explain how the data in the table support the concept of a crop’s consumption pattern being the result of globalization.

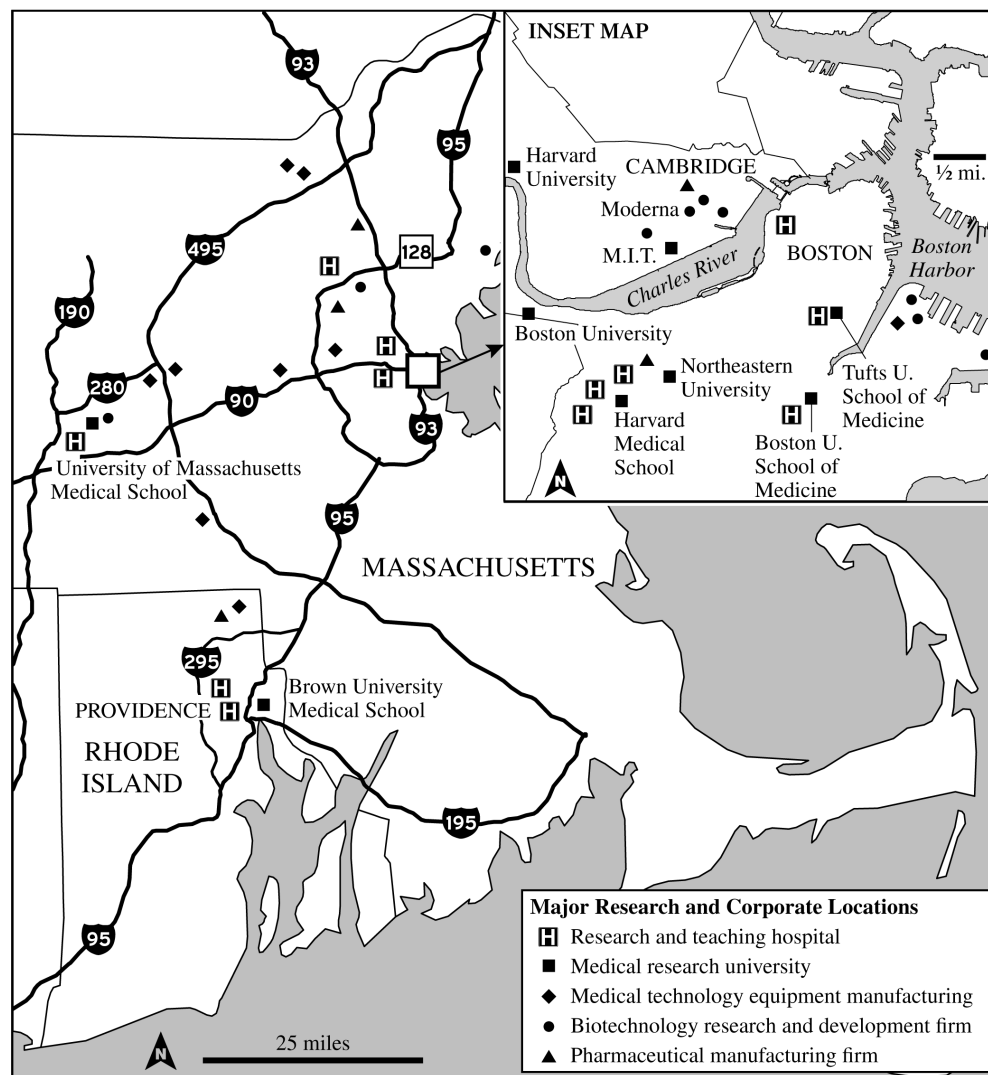
F. Explain why a crop may be farmed intensively in a less developed country and be farmed extensively in a more developed country.

G. Explain ONE way the global supply chain links crops such as those listed in the table to consumers in other countries.

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.

Question 3

**MAJOR MEDICAL AND BIOTECHNOLOGY COMPANIES AND INSTITUTIONS IN THE BOSTON AND PROVIDENCE REGION**



Source: National Institutes of Health

The inset map shows the downtown areas of Boston and Cambridge, Massachusetts.