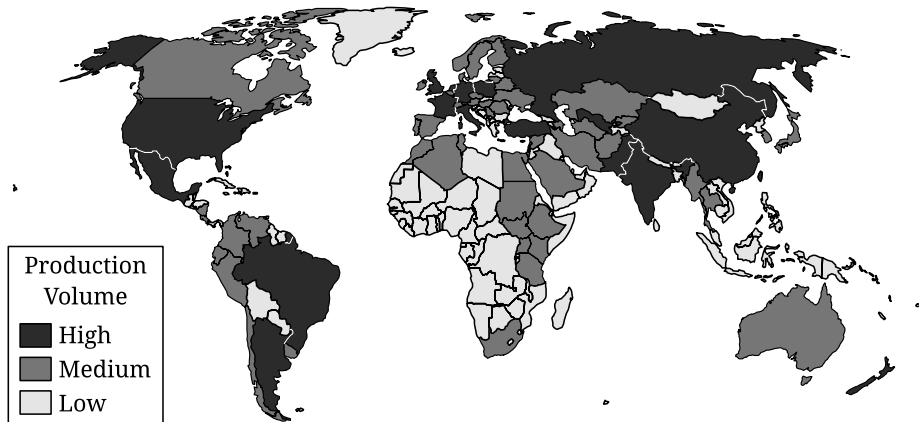
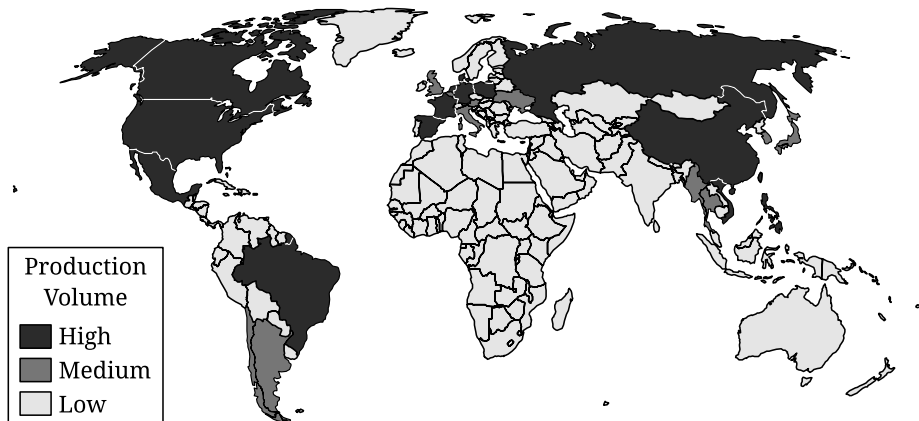


Map 1: Cow's Milk Production, 2018

Source: Food and Agriculture Organization

Map 2: Pork Production, 2018

Source: Food and Agriculture Organization

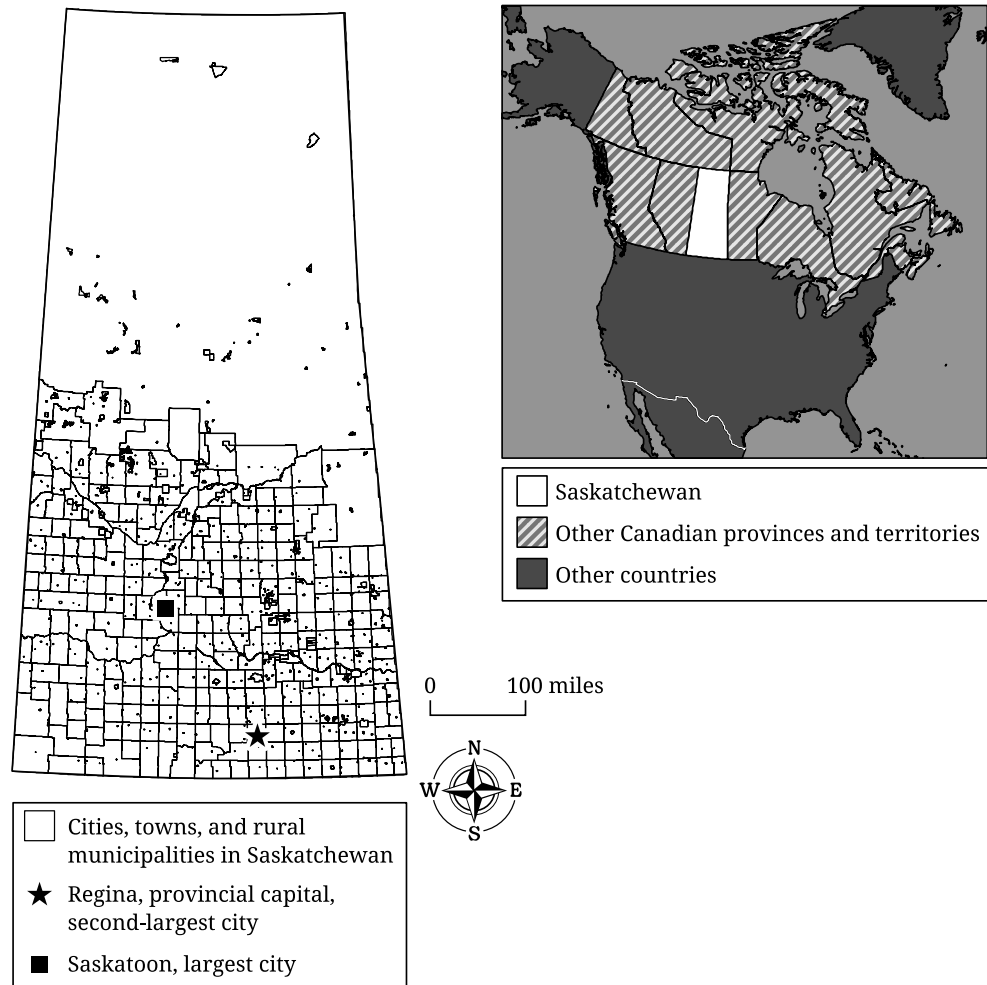
3. The global production of cow's milk and pork results in distinctive spatial patterns of contemporary agriculture and land use.

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

- A. Identify an example of a culture trait.
- B. Describe the spatial pattern of cow's milk production in Africa, shown in Map 1.
- C. 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.)
- D. Describe one environmental effect of agricultural land use such as commercial animal farms.
- E. Explain how the globalization of agriculture may affect local culture traits.
- F. Explain why regions of agricultural production may become interdependent.
- G. Explain how domesticated animals such as pigs spatially diffused to create the spatial pattern shown on Map 2.

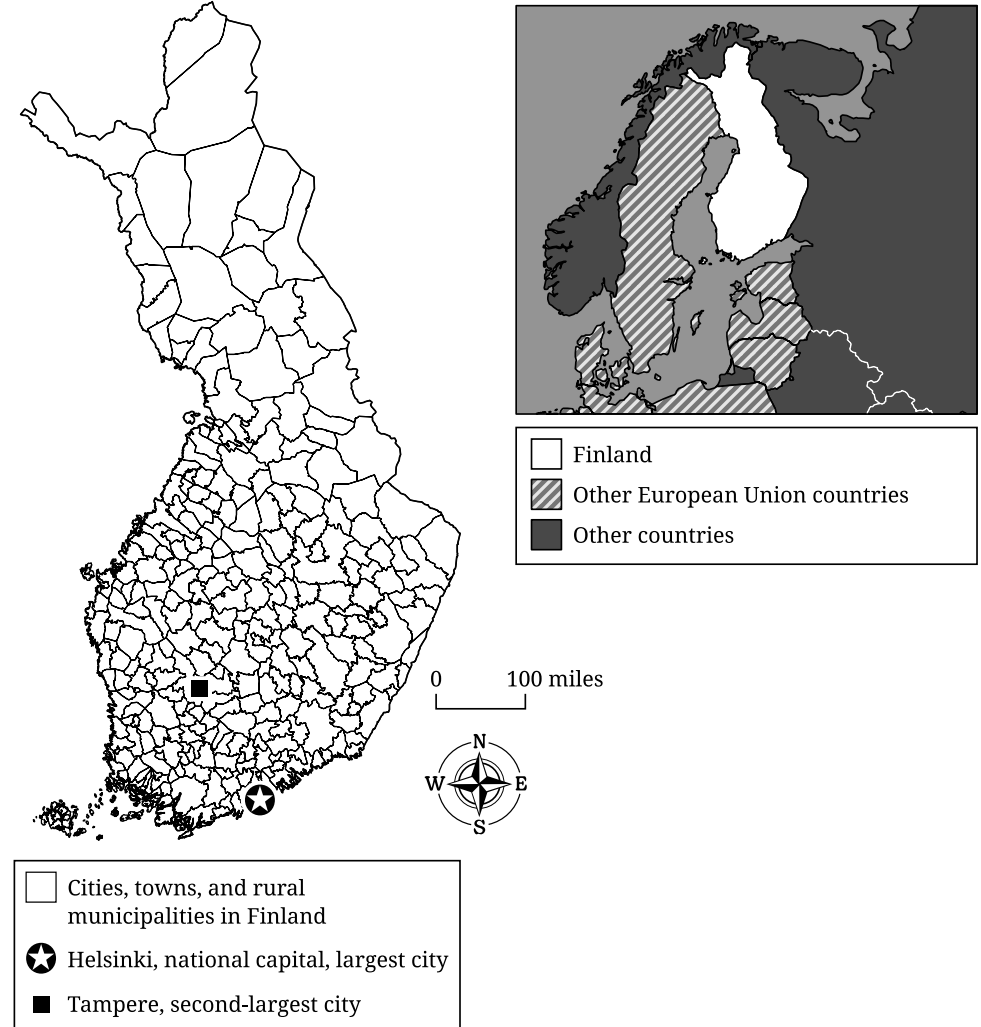
STOP
END OF EXAM

Map 1: Political Divisions in Saskatchewan, Canada



Source: Statistics Canada

Map 2: Political Divisions in Finland



Source: ESRI Data Partners

3. The two maps show political boundaries in Saskatchewan, Canada, and in Finland. Both Finland and Saskatchewan are home to populations of indigenous peoples with a significant amount of political autonomy. Finland is a member state of the European Union.

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

- A. Identify the scale of analysis used for Finland’s political divisions in Map 2.
- B. Define geometric boundaries as shown in Map 1.
- C. Describe one function of internal boundaries.
- D. Explain how the spatial organization of a country such as Canada is affected by a federal system of governance.
- E. Explain how the supranational organization shown in Map 2 may limit the actions of Finland as a member state.
- F. Describe one characteristic of a cultural landscape that may reflect cultural beliefs and identities.
- G. Explain how communication technologies may affect the cultural patterns of indigenous languages.

STOP
END OF EXAM

Question 2

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

Country	Corn (maize) (pounds per capita)	Potato (pounds per capita)	Rice (pounds per capita)	Yam (pounds per capita)	Cassava (manioc or yuca) (pounds per capita)
	Hearth: Mexico	Hearth: Peru	Hearths: China and Mali	Hearth: Niger River basin	Hearth: 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

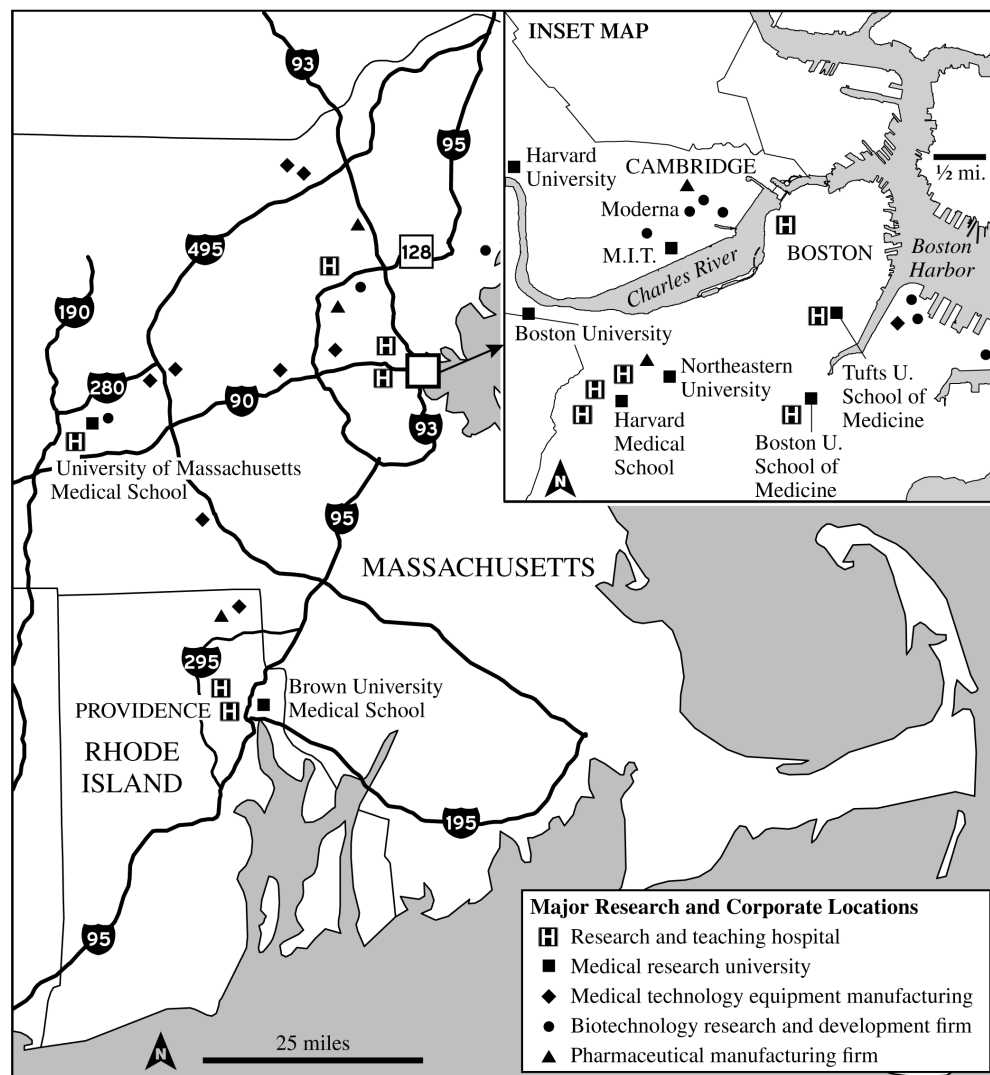
Source: Food and Agriculture Organization of the United Nations

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.