



AP[®] Human Geography 2011 Scoring Guidelines

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Question 1

The map and table above show the geographic location, population growth, and projected growth of Mexico's most populous cities.

Part A (3 points)

Define the following terms and describe how each relates to Mexico's urban geography.

Primate city (1 point)

Magnitude (it is more than two times the size of the next-largest city) AND significance (it exerts social, political, economic dominance).

Rank-size rule (1 point)

N th largest city is $1/n$ smaller than the largest city; more small cities, fewer larger cities.

Note: Do not grant credit if student misrepresents the proportion by saying $\frac{1}{2}$ for all relationships.

Describe how each relates to Mexican urban geography (1 point)

Mexico does not comply with the rank-size rule (there is a poorly developed urban hierarchy because Mexico City is a primate city).

OR

Mexico City is an example of a primate city because it is disproportionately larger than other Mexican cities and dominates the country.

Note: Either argument will earn the point, but students cannot contradict themselves.

Part B (4 points)

Explain TWO positive effects of primate cities on a country's economic development . . .

Positive effects (1 point each; total of 2 points)

- Advantages of agglomeration of economic activity.
- Large market for goods and services.
- Ability to offer high-end goods and services (including education) because of larger threshold population.
- Advantages of enhanced flow of information and ideas in large population.
- Advantages of centralized transportation and communication network.
- Global trade opportunities; primate cities can compete on a global scale and attract foreign investment.

Note: The response must focus on and explain the positive impact on economic development; for example, tourism in primate cities must be linked to economic benefits to the nation's economy.

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Question 1 (continued)

... and TWO different negative effects of primate cities on a country's economic development.

Negative effects (1 point each; total of 2 points)

- Unequal distribution of investments deters national economic development.
- Unequal economic and/or resource development.
- Unequal distribution of wealth and/or power.
- Transportation network (hub and spoke) prevents equal accessibility to all regions.
- Impact of centrifugal forces and difficulties of political cohesion on economic development.
- Brain drain — migration and unequal distribution of education, entrepreneurship, opportunities.
- Disproportionate effect of disaster in the primate city on entire country.
- Negative externalities, e.g., unsustainable urban growth/slums/environmental impacts **if** these are related to economic development, e.g., burden on national economy to cope with problems.

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Question 2

In 1798 Thomas Robert Malthus published *An Essay on the Principle of Population* in which he argued that population growth will inevitably outpace food production, resulting in widespread famine.

Part A (4 points: 1 point for each reason identified [ID] and 1 explanation point per ID)

Identify and explain TWO reasons why some geographers today believe Malthus' theory can be used to predict future population issues.

ID: Population has been rising quickly. **OR**
Population has generally grown as predicted by Malthus.

Explanation

- Limited use of contraception.
- Political policies, economic decisions, cultural beliefs that support population growth.
- Demographic transition model, referring to Stage 2 and/or early Stage 3.

ID: Food supply has increased, but it has not kept up with population increase. **OR**
Food supply has generally grown as predicted by Malthus.

Explanation

- Failure to adopt agricultural innovation, owing to political policies, economic decisions, cultural beliefs.
- Conversion of farmland for urban use.
- Environmental degradation such as desertification, overgrazing, clear cutting, soil erosion, unavailability of fresh water.
- Conversion of life-supporting crops to cash crops (tobacco, sugar, cotton, tea, coffee).
- Rising fuel costs will slow down growth of food production and distribution.
- Climate change will decrease production.

ID: There are other limiting factors on population in addition to food.

Explanation

- Because of resource overuse and/or environmental degradation, we are in danger of exceeding the carrying capacity (clean air, fossil fuel, water, and other resources).

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Question 2 (continued)

Part B (4 points: 1 point for each reason identified [ID] and 1 explanation point per ID)

Identify and explain TWO reasons why some geographers today believe Malthus' theory cannot be used to predict future population issues.

ID: Population growth has not been rising geometrically/exponentially. **OR**
Population has generally not grown as predicted by Malthus.

Explanation

- Expanded use of contraception.
- Political policies, economic decisions, cultural beliefs that limit population growth.
- Demographic transition model, referring to late Stages 3, 4, and/or 5 (declining birth rate).

ID: Food supply has grown faster than predicted by Malthus. **OR**
Carrying capacity has expanded.

Explanation

- New technologies, such as: mechanization, factory farming, industrial agriculture, agribusiness, use of chemicals, irrigation, GPS.
- Greater efficiencies, such as: larger farms, consolidation of farms, mechanization, multicropping.
- Green Revolution, genetically modified crops, multicropping, improved seeds, high-yielding cultivars.
- Expansion of agricultural lands.
- Human ability to create new techniques.

ID: Our ability to preserve food and/or distribute food to areas of need is much greater than during Malthus' time.

Explanation

- Improvements in any and all methods of transportation (highways, containerization, refrigerated trucks).
- Improvements in food preservation (refrigeration, packing, processed food).

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Question 3

Industrial location models are used to explain geographic patterns of economic activity. The maps above show automobile factories built before and after 1986 in the United States.

Part A (2 points)

Identify TWO changes in the geography of automobile factory construction shown by the maps.

1. International-based change in the geography of plant construction
 - a. Increase in the number/investment of foreign-owned automobile plants **OR**
 - b. Increase in both small and especially larger-size, foreign-owned automobile plants

Note: Students cannot earn 2 points for listing two international-based changes.

2. Domestic-based change in the geography of plant construction
 - a. Increase in the number/investment of automobile plants in the South or Southeast part (Sun Belt) of the United States
 - b. Increase in number/investment of automobile plants built away from the traditional core of the American manufacturing belt (Rust Belt)
 - c. Decrease in the number of American-owned automobile plants
 - d. Decrease in the number/investment of automobile plants west of the Mississippi River

Notes

- Students cannot earn credit by simply counting the change in number of plants per state.
- Students may earn 2 points for identifying TWO domestic-based changes.

Part B (4 points)

Identify and explain TWO factors related to industrial location that may have contributed to the changes.

Identification (1 point each)	Explanation (1 point each)
1. Low-cost labor (not low-skilled or uneducated workforce)	<ul style="list-style-type: none"> • More nonunionized labor in the South (or Southeast or Sun Belt). • Right-to-work states in the South (or Southeast or Sun Belt).
2. Market	<ul style="list-style-type: none"> • More foreign-owned companies to minimize shipping costs (cheaper transportation costs). • More foreign-owned companies to avoid paying federally imposed tariffs. • United States represents one of the world's largest markets for automobile consumption.
3. Deindustrialization (North only)	<ul style="list-style-type: none"> • Shifting or relocation of automobile plants because of high labor costs (unions) in the North. • Obsolete infrastructure in the North (or Rust Belt). • Outsourcing — domestic companies shifting from states in the North to Mexico.

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Question 3 (continued)

4. Government policies	<ul style="list-style-type: none">• Economic and development incentives — pro-industrial policies.• Connection to preexisting infrastructure systems — e.g., access to interstate highways, rail spurs, water/sewage/electricity.• State and local taxes — lower in the South, higher in the North.• Variances on zoning and environmental regulations.
5. Cheap land	<ul style="list-style-type: none">• Accessible and available sites in the South cost less than accessible and available sites in the North.
6. Available infrastructure	<ul style="list-style-type: none">• Cost-efficient interstate highway systems in the South (or Southeast or Sun Belt).• Cost-efficient rail system in the South (or Southeast or Sun Belt).• Allows quick and inexpensive assembly of supplies for the manufacture of automobiles and efficient distribution of automobiles to car dealerships.• Facilitates just-in-time production.
7. Cheap energy	<ul style="list-style-type: none">• Abundant, inexpensive supplies of energy in the South.• South (or Southeast) is below the national average for \$/kWh.

Note: No identification or explanation points should be awarded for the mention of raw materials.