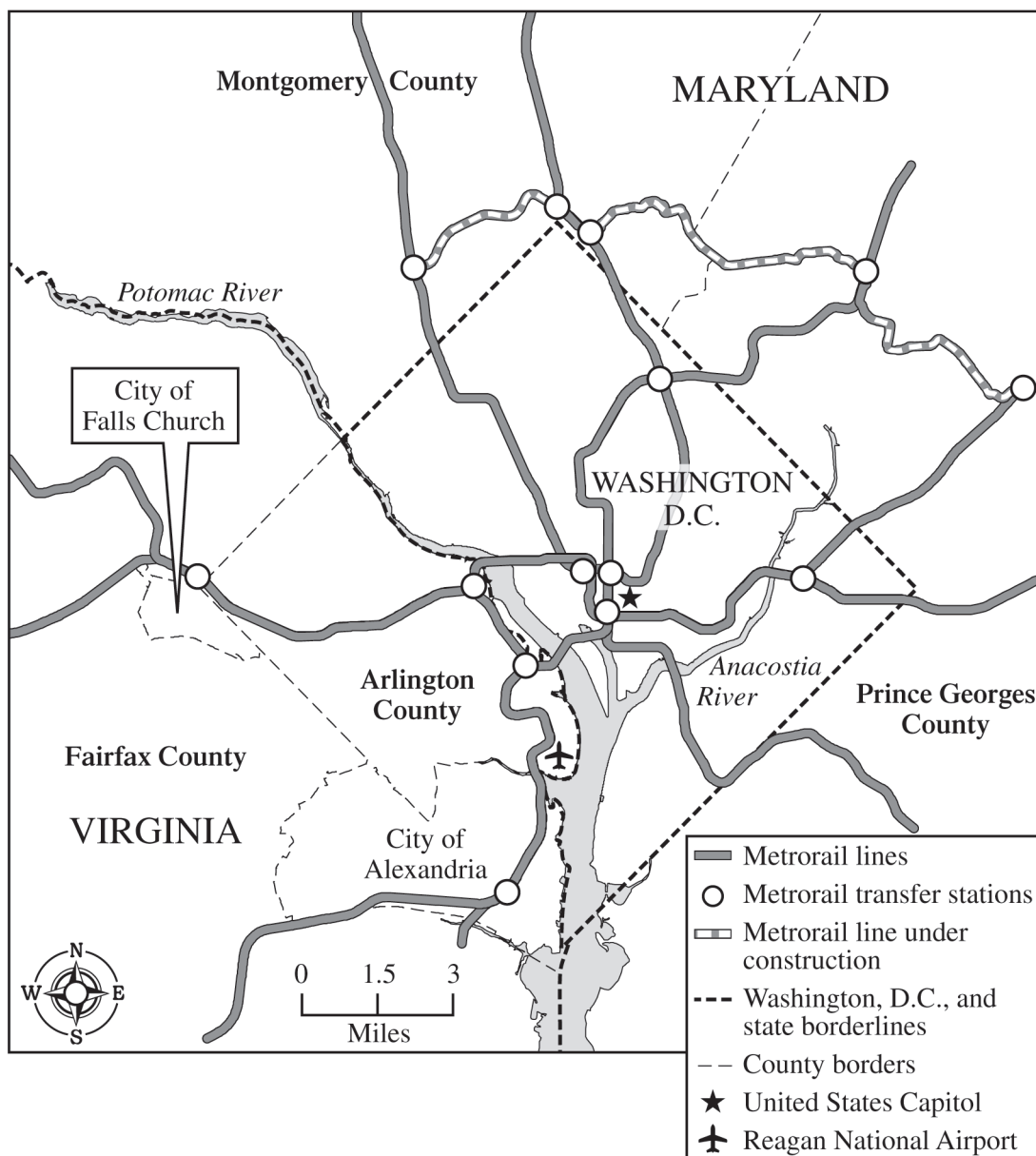


Question 2

Washington, D.C., and Surrounding Jurisdictions



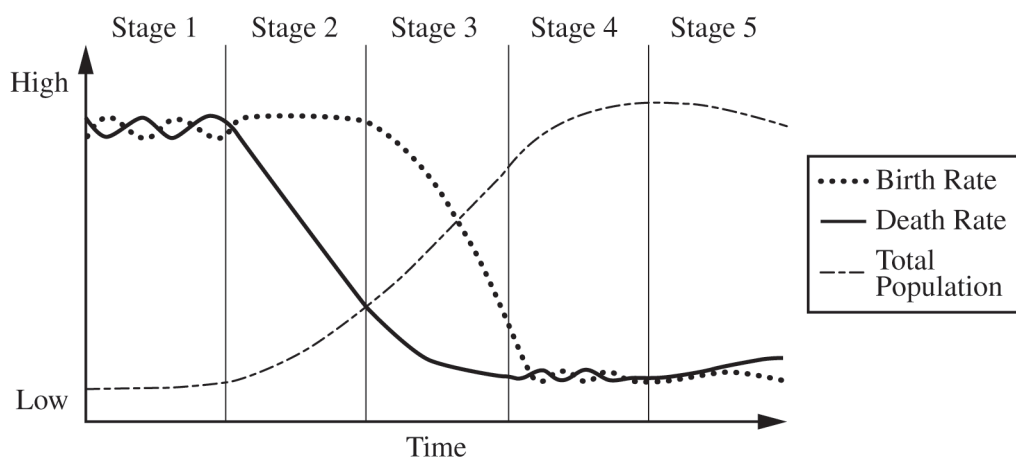
Source: ESRI Data Partners

2. The map shows political jurisdictions and Metrorail, a subway system in the Washington, D.C., metropolitan area. The city and county jurisdictions shown on the map operate the Washington Metropolitan Area Transit Authority (WMATA), which runs Metrorail.
- A. Identify ONE type of boundary shown on the map.
 - B. Describe ONE site characteristic of Washington, D.C., shown on the map.
 - C. Explain how political power is spatially distributed within a federal system of governance.
 - D. Explain ONE way suburban sprawl is likely to negatively affect environmental sustainability in metropolitan areas.
 - E. Describe ONE way transportation-oriented development, such as expanding a Metrorail line, may promote urban sustainability.
 - F. Explain how regional transportation networks led to the development of edge cities.
 - G. Explain how the geographic fragmentation of local governments could present a challenge to the Washington, D.C., metropolitan area's ability to construct a new Metrorail line.

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

Demographic Transition Model



Demographic Data for Selected Countries, 2019

Country	Birth Rate	Death Rate	Population Over Age 65
Croatia	9	13	21%
Estonia	11	12	20%
Germany	9	11	22%
Greece	8	12	22%
Japan	7	11	28%
Portugal	8	11	23%
Romania	10	13	19%

Source: World Bank

3. The demographic transition model can be used to theorize the changes in a country's total population over time.
- Select ONE country listed in the table and identify its stage in the demographic transition model.
 - Define the concept of a pronatalist policy.
 - Explain ONE factor that affects birth rates as countries move from stage 3 to stage 4 in the demographic transition model.
 - Describe ONE likely economic effect when countries have negative population growth.
 - Based on the data shown in the table, describe a policy that a government might develop in response to demographic change.
 - Explain ONE reason why the life expectancy in urban areas may be higher than the life expectancy in the entire country.
 - Using the data in the table, explain how, over time, low birth rates may impact the country's percent of population over age 65.

Question 2: One Stimulus**7 points**

(A) Identify ONE type of boundary shown on the map.**1 point**

Accept one of the following:

- A1. Political boundary (e.g., state, district, county)
- A2. Physical or natural boundary (e.g., the Potomac River)
- A3. Geometric boundary (e.g., District of Columbia, Arlington County)
- A4. Relict boundary (e.g., Arlington County was once part of the District of Columbia)
- A5. Superimposed boundary (e.g., District of Columbia)
- A6. Consequent boundary (e.g., Potomac River between the District of Columbia and Virginia)
- A7. Antecedent boundary (e.g., colonial-era boundaries)
- A8. Subsequent boundary (e.g., District of Columbia carved out of already existing Maryland and/or Virginia)

(B) Describe ONE site characteristic of Washington, D.C., shown on the map.**1 point**

Accept one of the following:

- B1. Washington, D.C., is located along the Potomac River and/or the Anacostia River.
- B2. Washington, D.C., is at the confluence or intersection of the Potomac River and the Anacostia River.
- B3. Washington, D.C., is at the intersection of the coastal plain and the Piedmont (foothills) or on the fall line.
- B4. Washington, D.C., is located in an area with a tidal estuary, a peninsula, freshwater streams, wetlands, fertile soils, low-lying areas, and/or tidal flats.

(C) Explain how political power is spatially distributed within a federal system of governance.**1 point**

Accept one of the following:

- C1. Power is dispersed or shared between the central, sub-national, and/or local governments.
 - C2. Most federal systems have capital districts (e.g., Washington, D.C., Brasília) or locations (e.g., courts, military bases) where some government functions are centralized and also sub-national (state, provincial, departmental) capitals where local or regional political functions are dispersed.
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- (D) Explain ONE way suburban sprawl is likely to negatively affect environmental sustainability in metropolitan areas. 1 point**

Accept one of the following:

- D1. Development related to sprawl (e.g., construction, transportation, utilities) can lead to increased air or water pollution.
- D2. Land cover change related to sprawl (e.g., deforestation) can lead to the loss or fragmentation of habitats, water pollution, and/or decreased biodiversity.
- D3. Expansion of transportation networks related to sprawl can lead to more pollution and/or warmer climates (e.g., traffic, congestion, urban heat islands, inefficient energy use).
- D4. Development related to sprawl can inhibit the use of land for local food production, open space, conservation, greenbelts, or preservation efforts.

-
- (E) Describe ONE way transportation-oriented development, such as expanding a Metrorail line, may promote urban sustainability. 1 point**

Accept one of the following:

- E1. By promoting walkability, livability, more efficient land use (e.g., fewer roadways, reduction in impermeable surfaces), and/or reductions in pollution.
- E2. By reducing the number of cars, resulting in decreased air and/or noise pollution.
- E3. By reducing the ecological footprint (e.g., reduced carbon footprint, reduced energy use) of the city.
- E4. Heavily trafficked and/or accessible transit stops may become places of mixed-use development.
- E5. Additional transit stops can reduce commuting distances or travel times to work and/or to other service locations.
- E6. Commuting can be more economically sustainable than car travel (e.g., cost of car ownership, fuel, maintenance, insurance, parking).

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- (F) Explain how regional transportation networks led to the development of edge cities. 1 point**

Accept one of the following:

- F1. Transportation enabled commercial land use to decentralize (move away) from city centers.
 - F2. Edge cities formed near major highway intersections or transit stations because those developments needed to be accessible to workers and/or consumers.
 - F3. By providing access to services or office locations for the people who live, work, and/or shop there.
 - F4. Transportation provides access to lower-cost land away from the city center (bid rent theory).
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|------------|--|----------------|
| (G) | Explain how the geographic fragmentation of local governments could present a challenge to the Washington, D.C., metropolitan area’s ability to construct a new Metrorail line. | 1 point |
|------------|--|----------------|

Accept one of the following:

- G1. Construction could be challenging because it would involve multiple governments to fund, plan, zone, and/or cooperate.
- G2. Local governments could disagree with the federal government about where to construct a new Metro line.
- G3. Construction could be challenging because parts of the new Metro line might not fall clearly under the jurisdiction of a specific government.
- G4. Having many competing ideas or authorities could make the planning process inefficient and/or make it difficult to determine accountability.
- G5. Local governments could disagree on how to share the costs of construction and/or operational costs of the rail system.
- G6. Local governments could disagree on the location of new stations because development around new Metro stations is a source of tax revenue and/or economic development.

Total for question 2: 7 points