

Past-paper walk-through

Density and Land Use ■ 6.6

eXercise

Questions in this set

- 2024 Set 2 Q2

Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- **//** separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = “or words to that effect” – the wording need not match.

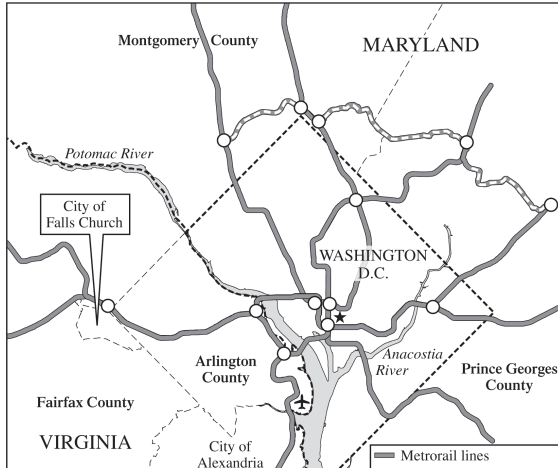
Question 2

2024 Set 2 ■ Q2

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.

Question 2



Question 2



Question 2

2024 Set 2 ■ Q2

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.

(b) Describe ONE site characteristic of Washington, D.C., shown on the map.

Question 2

2024 Set 2 ■ Q2

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.

(c) Explain how political power is spatially distributed within a federal system of governance.

Question 2

2024 Set 2 ■ Q2

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.

(d) Explain ONE way suburban sprawl is likely to negatively affect environmental sustainability in metropolitan areas.

Question 2

2024 Set 2 ■ Q2

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.

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

Question 2

2024 Set 2 ■ Q2

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.

(f) Explain how regional transportation networks led to the development of edge cities.

Question 2

2024 Set 2 ■ Q2

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.

(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. and fill in the appropriate circle at the top of each page to indicate the question number.

Demographic Transition Model Demographic Data for Selected Countries, 2019

Country	Birth Rate	Death Rate	Population Over Age 65
Croatia	21%		
Estonia	20%		
Germany	22%		
Greece	22%		
Japan	28%		
Portugal	23%		
Romania	19%		

Source: World Bank

Solution 2

(a) Mark scheme

- - Political boundary (e.g., state, district, county)
- - Physical or natural boundary (e.g., the Potomac River)
- - Geometric boundary (e.g., District of Columbia, Arlington County)
- - Relict boundary (e.g., Arlington County was once part of the District of Columbia)
- - Superimposed boundary (e.g., District of Columbia)
- - Consequent boundary (e.g., Potomac River between the District of Columbia and Virginia)

Solution 2

- - Antecedent boundary (e.g., colonial-era boundaries)
- - Subsequent boundary (e.g., District of Columbia carved out of already existing Maryland and/or Virginia)

Solution 2

(b)

Mark scheme

- - Washington, D.C., is located along the Potomac River and/or the Anacostia River.
- - Washington, D.C., is at the confluence or intersection of the Potomac River and the Anacostia River.
- - Washington, D.C., is at the intersection of the coastal plain and the Piedmont (foothills) or on the fall line.
- - 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.

Solution 2

(c)

Mark scheme

- - Power is dispersed or shared between the central, sub-national, and/or local governments.
- - 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.

Solution 2

(d) Mark scheme

- - Development related to sprawl (e.g., construction, transportation, utilities) can lead to increased air or water pollution.
- - Land cover change related to sprawl (e.g., deforestation) can lead to the loss or fragmentation of habitats, water pollution, and/or decreased biodiversity.
- - 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).
- - Development related to sprawl can inhibit the use of land for local food production, open space, conservation, greenbelts, or preservation efforts.

Solution 2

(e) Mark scheme

- - By promoting walkability, livability, more efficient land use (e.g., fewer roadways, reduction in impermeable surfaces), and/or reductions in pollution.
- - By reducing the number of cars, resulting in decreased air and/or noise pollution.
- - By reducing the ecological footprint (e.g., reduced carbon footprint, reduced energy use) of the city.
- - Heavily trafficked and/or accessible transit stops may become places of mixed-use development.
- - Additional transit stops can reduce commuting distances or travel times to work and/or to other service locations.

Solution 2

- - Commuting can be more economically sustainable than car travel (e.g., cost of car ownership, fuel, maintenance, insurance, parking).

Solution 2

(f)

Mark scheme

- - Transportation enabled commercial land use to decentralize (move away) from city centers.
- - Edge cities formed near major highway intersections or transit stations because those developments needed to be accessible to workers and/or consumers.
- - By providing access to services or office locations for the people who live, work, and/or shop there.
- - Transportation provides access to lower-cost land away from the city center (bid rent theory).

Solution 2

(g) Mark scheme

- - Construction could be challenging because it would involve multiple governments to fund, plan, zone, and/or cooperate.
- - Local governments could disagree with the federal government about where to construct a new Metro line.
- - Construction could be challenging because parts of the new Metro line might not fall clearly under the jurisdiction of a specific government.
- - Having many competing ideas or authorities could make the planning process inefficient and/or make it difficult to determine accountability.

Solution 2

- - Local governments could disagree on how to share the costs of construction and/or operational costs of the rail system.
- - 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.