



# AUSTRALIAN GEOGRAPHY COMPETITION

## 2023 Year 11

Welcome to the 2023 Australian Geography Competition!

You have 30 minutes to complete 40 questions.

NOTE: Due to the size of some graphics, you may need to scroll down the page to see the complete graphic.

Some questions require the use of a ruler or calculator. To use, click on the icon at the top right of the screen. To turn off, click the icon again.

If you want to enlarge a graphic or text, click on the magnifying glass at the top left of the screen.

There is a timer count-down at the top left of the screen.

The flag button at the bottom right of the screen can be used as a reminder for a question you want to come back to. On the question overview page you can see which questions you flagged.

The tiles button in the top middle of the screen next to the question number takes you to the question overview.

The question overview shows a summary of questions not started, completed or flagged.

Progress summary
Show all
1 Answered
3 Not answered
36 Not read
1 Flagged

Questions

Click a number to go to that question.

1 2 3 4 5 6 7 8 9

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Good luck!

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\*note: on a question where this is more than one drop down to be answered, and only one list is visible, all answer options are the same for each of the drop downs



**Question 1 of 40**



Based on the animation below, which type of flooding occurred in this area of the Kimberley in January 2023?

- coastal       overland       flash       riverine



Flooding in the Kimberley, WA

Images source: NASA Earth Observatory

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**Question 2 of 40**



What was the cause of the flooding seen in the image?

- ex-tropical cyclone       East Coast low       severe thunderstorm       cold front



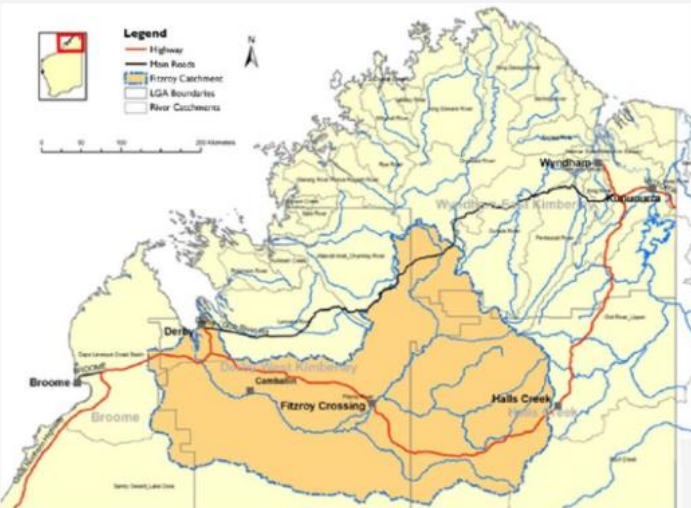
Flooding in the Kimberley, WA

Images source: NASA Earth Observatory

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Fitzroy River catchment

© University of WA CENRM



Flooding in the Kimberley, WA

Images source: NASA Earth Observatory

Based on the two images, which statements relating to the flooding on the Fitzroy are correct? Select all that apply.

- Remote communities were isolated by the flooding.
- Flooding of the Fitzroy is unusual in January.
- Freight trucks from Perth to Halls Creek detoured via Darwin.
- Bridges were damaged by the flooding.

**Question 4 of 40**

The Fitzroy River is included in the West Kimberley National Heritage Listing. Choose the drop-down word that correctly classifies its values as aesthetic, cultural, economic or environmental.

Fitzroy River Values	Classification
The Fitzroy River is a rich source of food for both Indigenous and non-Indigenous people.	<input type="text"/>
The threatened purple-crowned fairy wren is restricted to the forests fringing the Fitzroy.	<input type="text"/>
Four different expressions of the Rainbow Serpent traditions are found within the Fitzroy's catchment.	<input type="text"/>
The towering white and grey walls of Geikie Gorge are breathtaking.	<input type="text"/> <ul style="list-style-type: none"> <li>Aesthetic</li> <li>Cultural</li> <li>Economic</li> <li>Environmental</li> </ul>

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**Question 5 of 40**

Drag and drop the term that best matches each definition.

Disaster
Hazard
Risk

Term	Definition
<input type="text"/>	a situation that has the potential to endanger communities or damage the environment
<input type="text"/>	the likelihood that a harmful situation will occur and its possible impacts
<input type="text"/>	a situation that causes more adverse impacts than a community can recover from without external support

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The areal extent of a hazard refers to the:

- specific location of a hazard
- area that a hazard impacts
- direction of a hazard
- distance a hazard has moved

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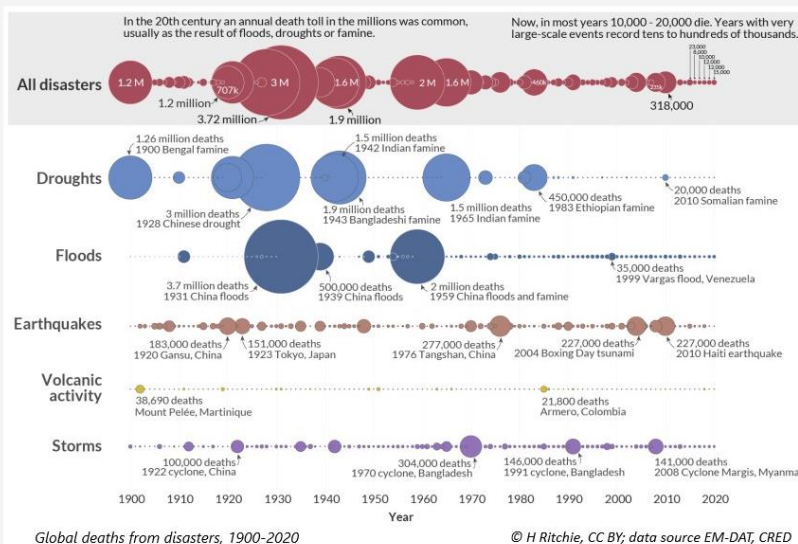


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Using the graph below, the largest number of deaths from natural disasters occurred during which time period?

- 1900 - 1920
- 1920 - 1940
- 1940 - 1960
- 1960 - 1980



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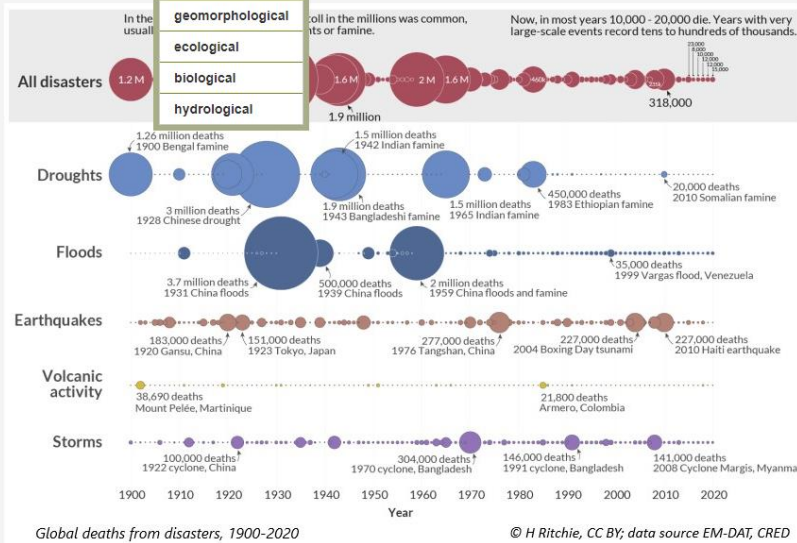
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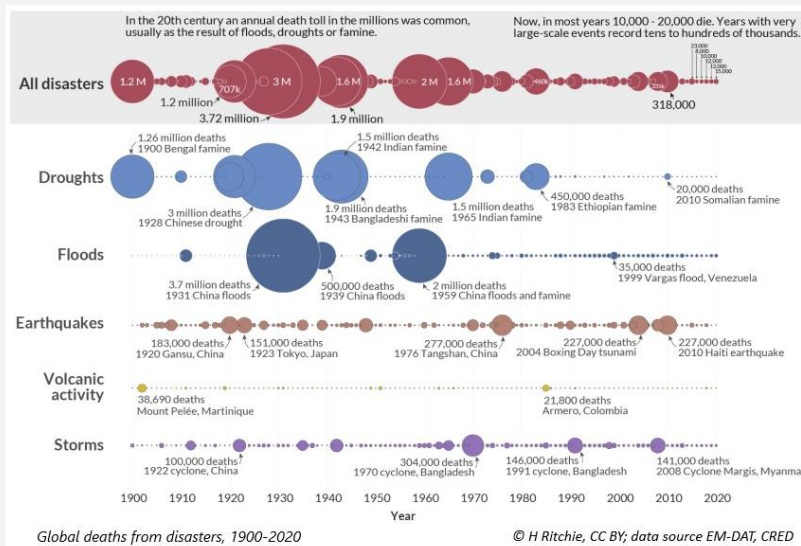
Choose the drop-down word that correctly completes the sentence.

From the graph below, geomorphological hazards have been responsible for the greatest number of deaths since 1900.



What is the most likely reason for the change in the number of deaths attributed to droughts since the 1980s?

- humans adapting to climate change
- better water security
- better food security
- fewer droughts due to climate change





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Which of these hazards generally has the fastest rate of onset?

- a riverine flood
- an earthquake
- a volcanic eruption
- a pandemic

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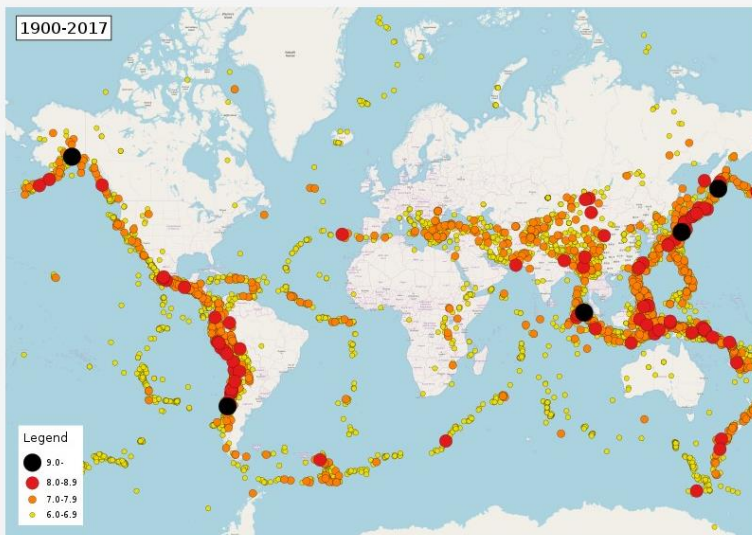
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Based on the data in the map below, drag and drop the words to correctly complete the sentences.

convergent   divergent   transform   duration   magnitude   rate of onset   Africa   America   Asia

In areas where there is a  plate margin, the  and frequency of earthquakes tend to be higher. An example of this is eastern .



Map of earthquakes, 1900-2017

© Phoenix7777, CC BY SA 4.0

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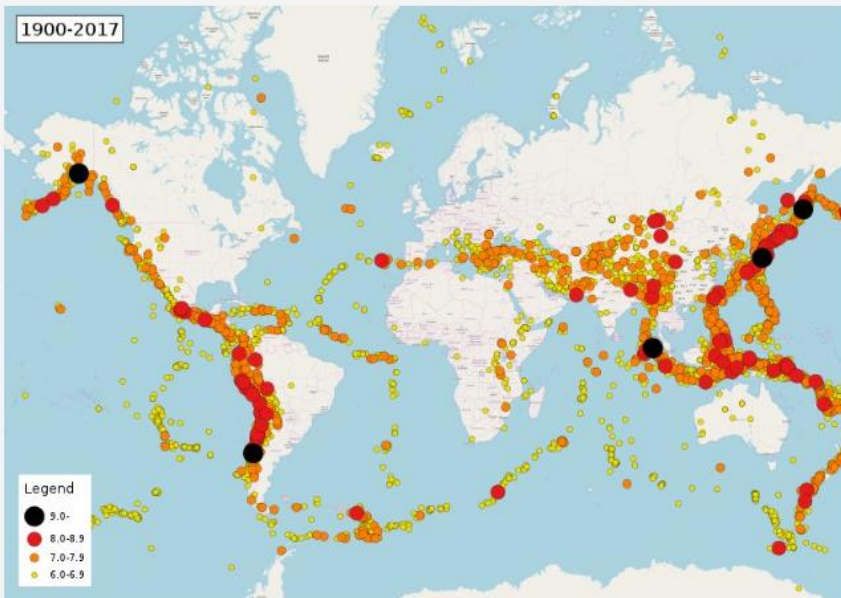
Question 12 of 40



Based on the data in the map, indicate if these statements are true or false by dragging your answer into the box.

True False

Statement	True/False
The earthquakes with the highest magnitude occur the least frequently.	<input type="text"/>
Earthquakes occur more often on South America's Atlantic coast than on its Pacific coast.	<input type="text"/>
The majority of earthquakes over magnitude 8 occur around the Ring of Fire.	<input type="text"/>



Map of earthquakes, 1900-2017

© Phoenix7777, CC BY SA 4.0

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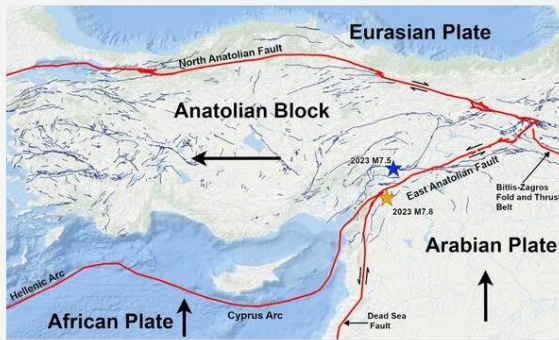




Drag and drop the text that correctly completes the sentence.

normal    reverse    strike-slip

The earthquakes in Turkey on 6 February were in the East Anatolian Fault Zone. Based on the map below, the East Anatolian Fault is a  fault.



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Drag and drop the essential steps of hazard mitigation into order, from first to last.

defining a mitigation strategy

vulnerability analysis

hazard identification

implementation of mitigation projects

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Which strategies increase a country's resilience to earthquakes? Select all that apply.

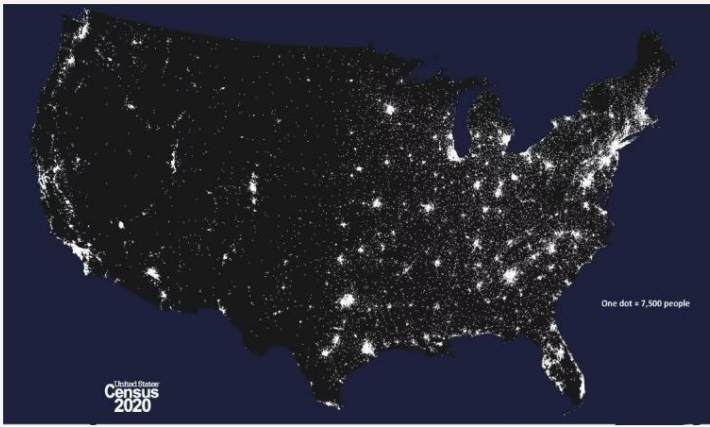
- early warning evacuation technology
- enforcing appropriate building codes
- developing local search and rescue capacity
- public education preparedness programmes

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Question 16 of 40




Based on the map below, what is the spatial pattern of the population distribution in the USA?

clustered       random       linear






2020 population distribution in the contiguous USA ©US Department of Commerce




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  **Question 17 of 40** 

What are some reasons why people choose to move to cities? Select all that apply.




- access to healthcare services
- access to education
- increased job opportunities
- less polluted air
- access to open spaces

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  **Question 18 of 40** 

A city's demographic characteristics refer to the:

- processes that drive urbanisation
- ways that urban functions change over time
- attributes of a city's population such as age and gender
- historical, cultural and economic factors that affect the city's spatial layout

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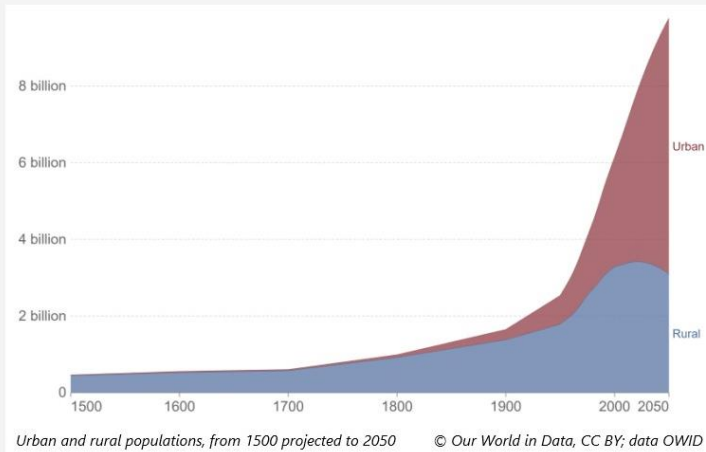


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Which type of graph is the one below?

- multiple line graph                       histogram  
 ternary graph                                 cumulative line graph



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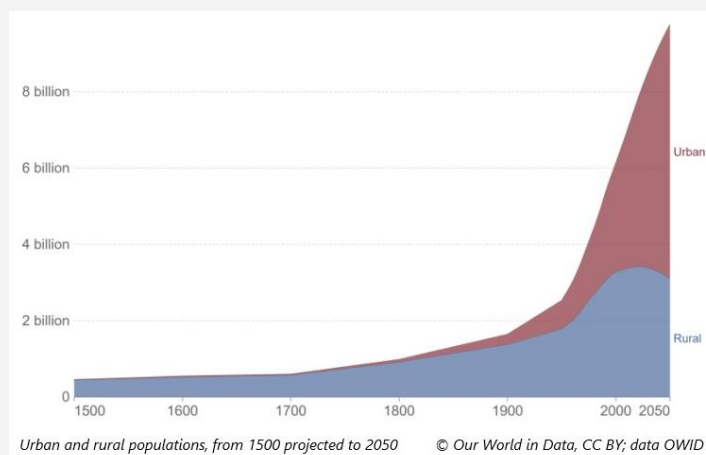


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Using the graph, when did the proportion of the world's population living in urban areas exceed that living in rural areas?

- 1800                       1910                       1960                       2010



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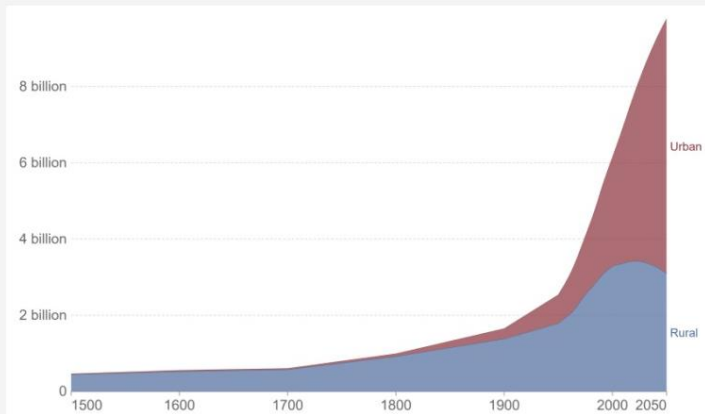


Using the graph, approximately how many people are predicted to be living in urban areas by 2050?

3.1 billion

6.7 billion

9.8 billion



Urban and rural populations, from 1500 projected to 2050 © Our World in Data, CC BY; data OVID

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Choose the drop-down word that correctly completes the sentence.

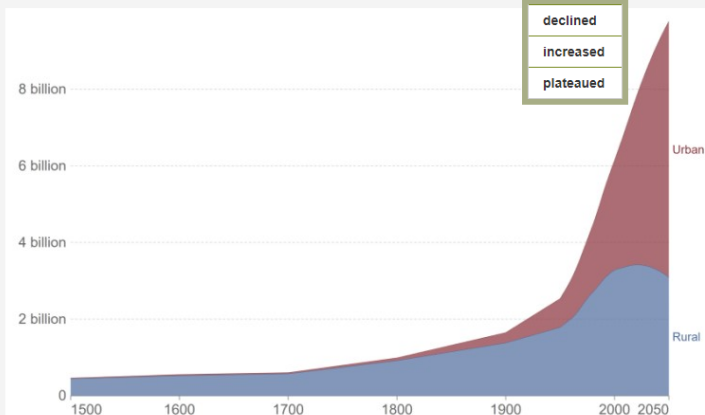
Using the graph, from 1500 to 2021, the number of people living in rural areas \_\_\_\_\_.

▲

declined

increased

plateaued



Urban and rural populations, from 1500 projected to 2050 © Our World in Data, CC BY; data OVID

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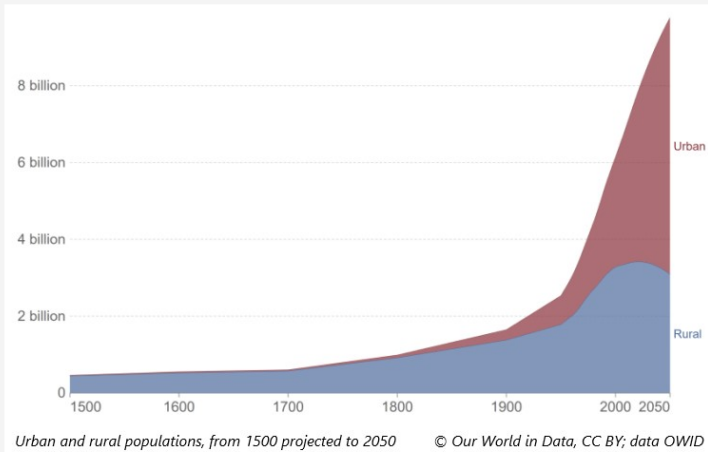


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Which of these conclusions can be correctly determined from the graph? Select all that apply.

- The industrial revolution is responsible for the rapid rise in the urban population.
- A rapid increase in the proportion of people living in urban areas coincided with rapid population growth.
- The world has undergone a process of rapid urbanisation since 1950.
- The world's population has only recently become more urbanised than rural.



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Which of these statements are correct? Select all that apply.

- Urbanisation refers to an increasing proportion of people living in urban areas.
- An increasing number of people living in an urban area is referred to as urban growth.
- Urbanisation must always occur for urban growth to take place.
- Urbanisation refers to large capital cities while urban growth is more relevant to smaller cities.

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Classify the statements as either a cause or consequence of the growth of Jakarta, Indonesia. Click on the box in the correct column.

Statement	Cause	Consequence
Traffic congestion in Jakarta creates long commutes for residents.	<input type="checkbox"/>	<input type="checkbox"/>
Jakarta is the centre of government.	<input type="checkbox"/>	<input type="checkbox"/>
Increased drilling for home wells to access groundwater is causing subsidence.	<input type="checkbox"/>	<input type="checkbox"/>
Air pollution is routinely higher than WHO air quality guidelines.	<input type="checkbox"/>	<input type="checkbox"/>
Traditional farming practices do not provide enough income for families.	<input type="checkbox"/>	<input type="checkbox"/>

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Building in Singapore

© B Morin, CC BY SA 4.0

Which of these urban challenges is the design in the photo best addressing?

- traffic congestion
- urban blight
- urban heat island
- high housing cost

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The term urban morphology refers to a city's:


- site and situation
- development and expansion
- functional complexity
- layout and form


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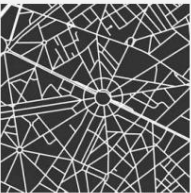
The diagrams below are of street networks covering 1 square mile (2.6 km<sup>2</sup>) from four different cities. Match the captions to the diagrams by dragging and dropping below the appropriate diagram.

A North African city with its medieval medina quarter in the centre	Near the centre of a European city, extensively remodelled in the 19th century
A suburban business park in North America, designed in the 1960s	A planned residential suburb, typical of late 20th century American urban design









Images © G Boeing, CC BY SA 4.0

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Which process in a city is best defined as where one land use function takes over from another?

- succession
- gentrification
- rural-urban fringe
- urban expansion

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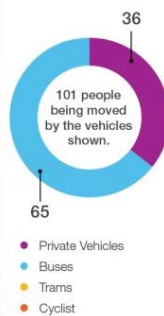
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Based on the image below, in which ways can multi-modal transport improve liveability? Select all that apply.

- reduces traffic congestion
- reduces carbon emissions
- reduces destination choice
- improves social connections

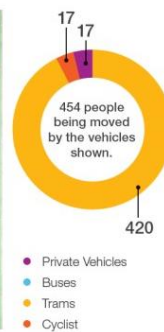
CAR ORIENTED



Note assumptions:

- 30 Private vehicles with 1.2 people per car moving 36 people
- 2 Buses with 50% occupancy moving 65 people

MULTI-MODAL



Note assumptions:

- 14 Private vehicles with 1.2 people per car moving 17 people (with less traffic congestion)
- 2 Trams with 70% occupancy moving 420 people
- 17 Bicycles moving 17 people

Using the Gold Coast's road space more efficiently

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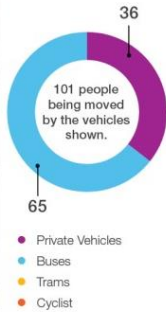
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Choose the drop-down text that correctly completes the sentence. You can estimate the number or use the calculator by clicking on the symbol in the top right corner.

Using the car-oriented information below, with average occupancies, a bus moves approximately twice as many people as a car.

CAR ORIENTED

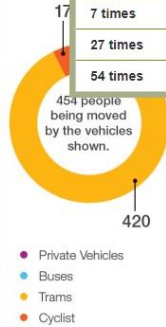


Note assumptions:

- 30 Private vehicles with 1.2 people per car moving 36 people
- 2 Buses with 50% occupancy moving 65 people

Using the Gold Coast's road space more efficiently

MULTI-MODAL



Note assumptions:

- 14 Private vehicles with 1.2 people per car moving 17 people (with less traffic congestion)
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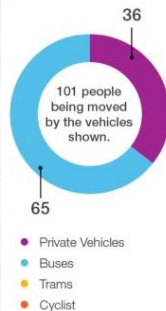
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What is the best explanation why buses are shown as having a lower occupancy rate than trams in the image below?

- Trams only travel on popular routes.
- More people can travel on trams.
- Trams emit fewer greenhouse gases.
- Buses are very noisy.

CAR ORIENTED

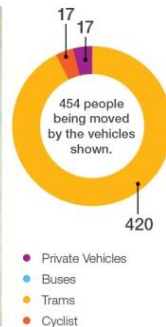


Note assumptions:

- 30 Private vehicles with 1.2 people per car moving 36 people
- 2 Buses with 50% occupancy moving 65 people

Using the Gold Coast's road space more efficiently

MULTI-MODAL



Note assumptions:

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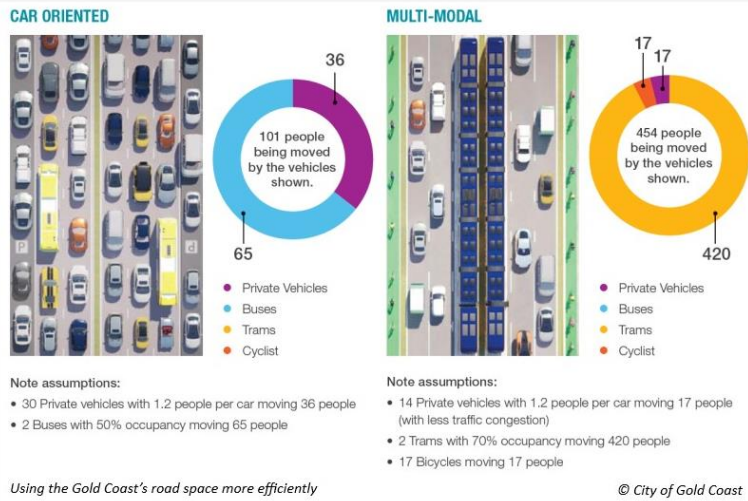
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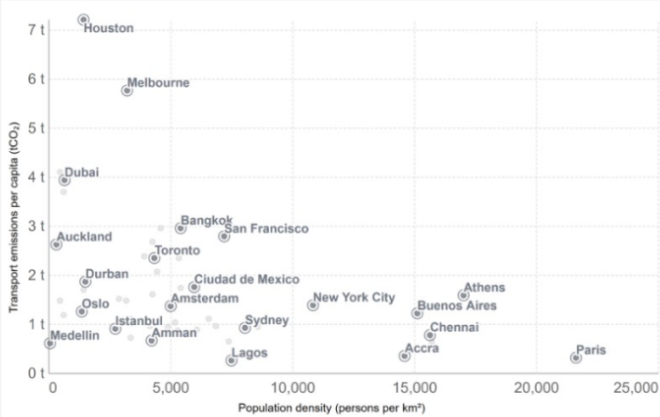
Which of these would be a negative consequence of shifting to the multi-modal transport model shown in the image below?

- Lack of parking reduces trade in local businesses.
- Active transport methods are discouraged.
- Commuters spend less time travelling to work.
- Private car ownership becomes more expensive.



Which of these best defines transit oriented development?

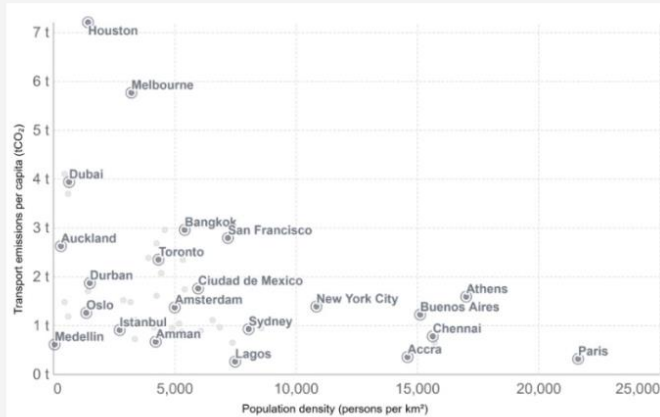
- the development of communities in greater density around public transport infrastructure
- aligning development to make the best use of existing major arterial roads and motorways
- the development of integrated transport infrastructure
- a development where medium and high-density housing, retail and employment are in walking distance of each other



Transport CO<sub>2</sub> emissions vs population density of selected cities © Our World in Data, CC BY; data C40 Cities

Which of these statements is supported by the data in the graph?

- For most cities, there is no correlation between the indicators.
- For the most densely-populated cities, there is a negative correlation between the indicators.
- For the least densely-populated cities, there is a positive correlation between the indicators.
- There is a strong negative correlation between the indicators.



Transport CO<sub>2</sub> emissions vs population density of selected cities © Our World in Data, CC BY; data C40 Cities

Which other factor most influences the level of CO<sub>2</sub> emissions from low density cities?

- reliance on car travel
- type of housing density
- location of city
- level of development



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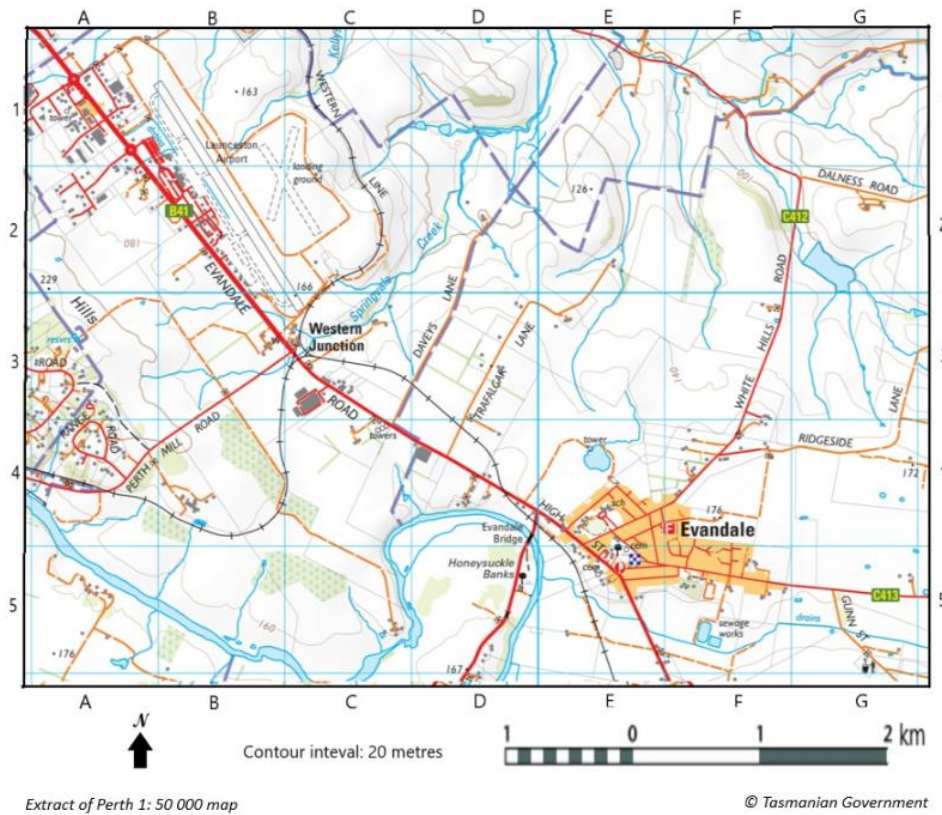
Using the map, in approximately which direction would you be driving to go from Evandale to Western Junction?

WNW

SSE

NNW

ESE



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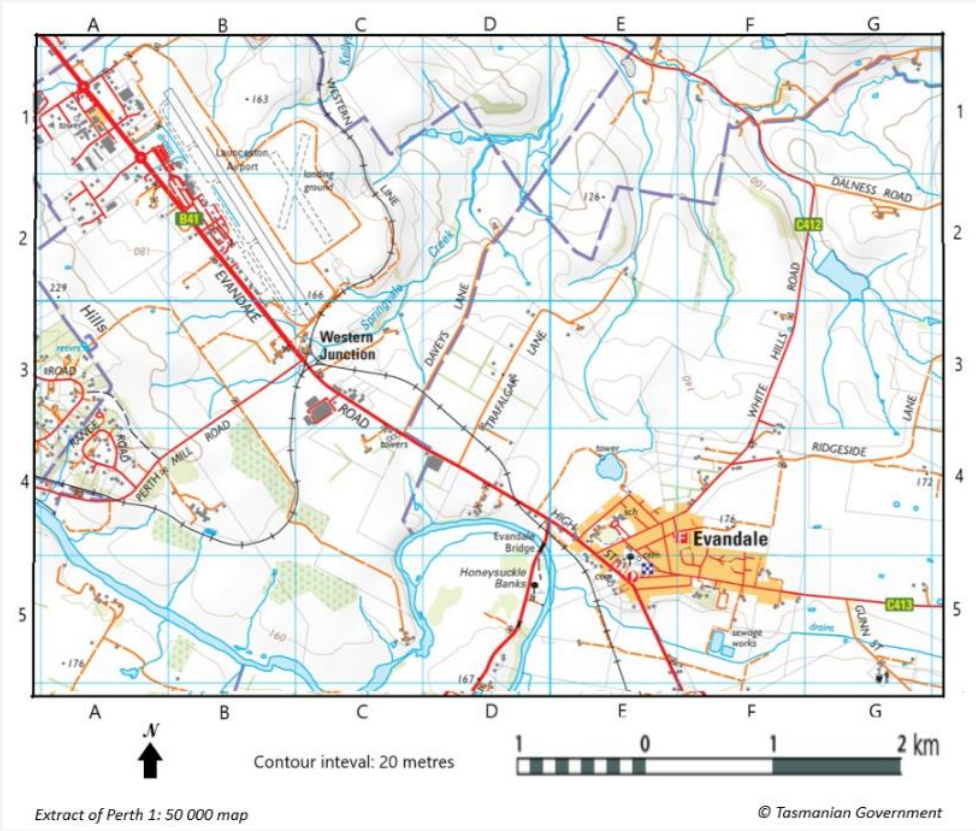
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Drag and drop the number that correctly completes the sentence. You may need to scroll down to see all the map.

- 150
- 170
- 190
- 200

The plantation shown in grid square C5 on the map is approximately  metres above sea level.



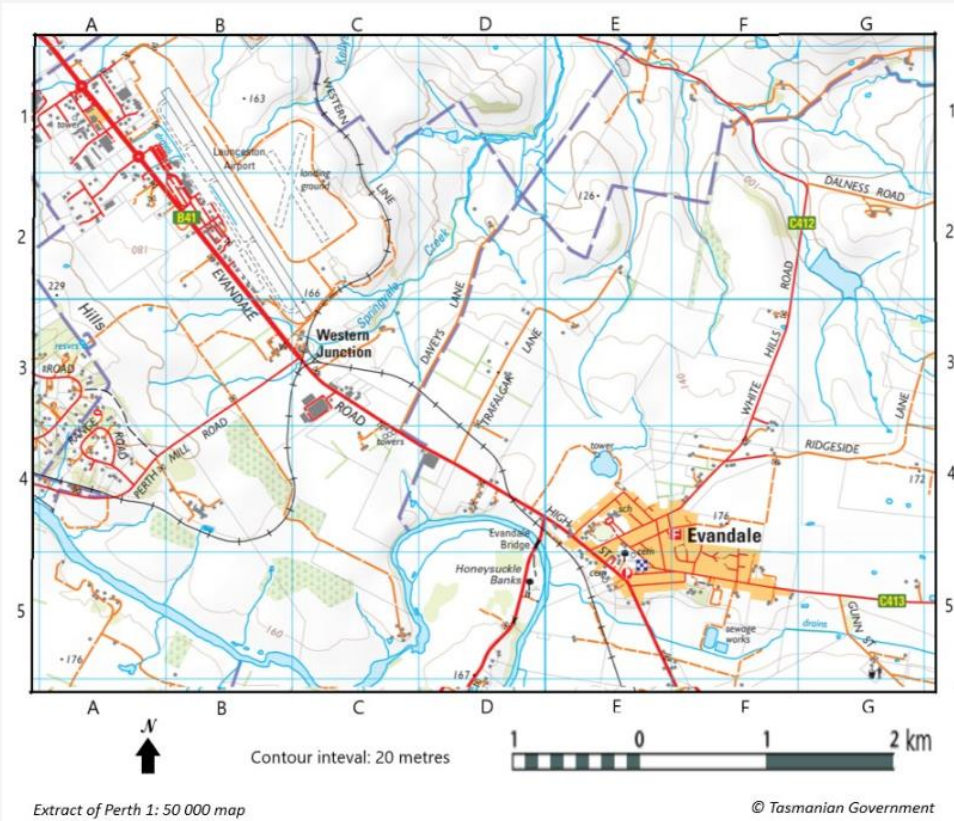
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Which of these is located in grid square G2 on the map?

- farm dam     
  hydroelectric station     
  lagoon     
  swamp



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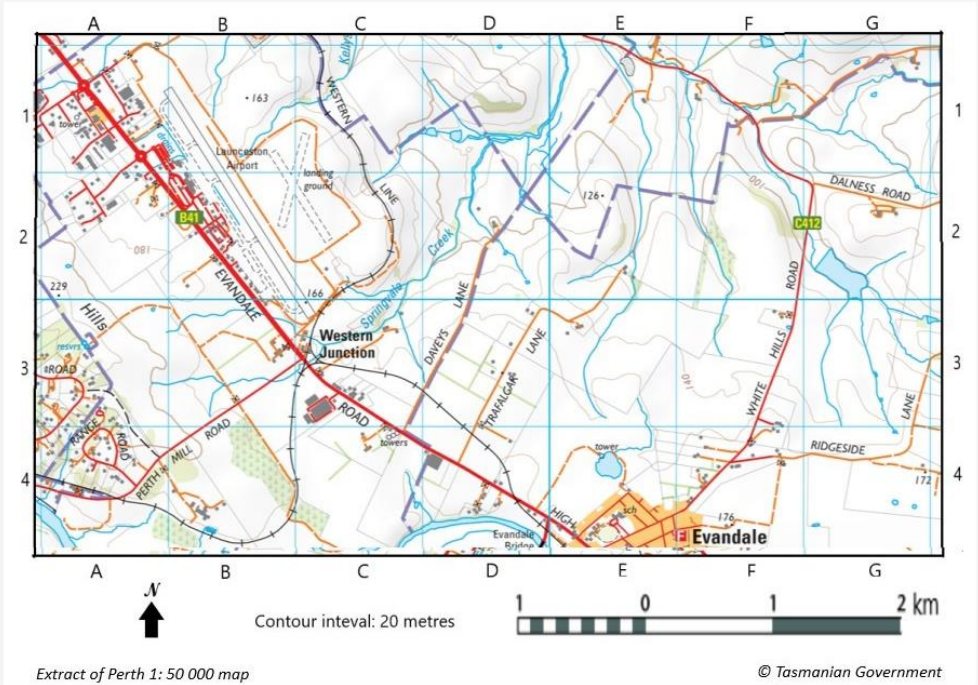




Drag and drop the number that correctly completes the sentence. You may use the on-screen ruler - click on the symbol in the top right corner, drag and rotate it.

- 1.2   2.1   3.2   4.3

Using the map below, the length of Launceston Airport's main runway (see B1) is approximately  km.



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