Tutorial Letter 105/1/2018

Know your world: Introduction to Geography

GGH1501

Semester 2

Department of Geography

IMPORTANT INFORMATION

This tutorial letter contains:
- Comments on the activities in Learning units 4, 5, 6 and 7
- Comments on the self-test questions in Learning units 4, 5, 6 and 7
Dear Student

The purpose of Tutorial Letter 105 is to provide comments on the activities in learning units 4, 5, 6 and 7 as well as on the self-test questions in learning units 4, 5, 6 and 7

Note the following acronyms that are used in the various sections of this tutorial letter to refer to different elements of the study material:

- PB Sect A: Section A of the prescribed book
- PB Sect B: Section B of the prescribed book
- MCQs: Multiple-choice questions
- SG: GGH1501_SG001_2018 (“study guide document”)
- LU: Learning unit
- Sect: Section
- Ch: Chapter
- Fig: Figure
- p/pp: page/pages

The lecturers who have contributed to this tutorial letter are mentioned in the sections they have compiled. Please contact them as indicated if you have queries.

2 COMMENTS ON THE ACTIVITIES IN LEARNING UNITS 4, 5, 6 and 7

Learning unit 4 (The global cultural mosaic)
Enquiries: Mr Curtis Mashimbye, +27 11 471 2107, mashinc@unisa.ac.za

Note: These comments were originally compiled by Ms Claire Fordred during Semester 1 of 2017 and were slightly edited before including it here.
Activity 4.1: Distribution of languages and religions

**Aim of activity:** To establish the spatial relationship between language and religion.

**Source material:** PB Sect B: 168–170, 178, Fig 7.2.1 & Fig 7.7.1; SG: 61–63

**Feedback/Pointers to a good answer:**
1. Use PB Sect B: Fig 7.2.1 to see which country has the smallest shaded area depicting a language. Using the legend, you will see that it is Korean.
2. English and Arabic are the most widely spoken language families and are seen as more common languages. Korean is not a common language and has not spread as widely as the two dominant languages. Korean is more isolated and unrelated to other languages, so it did not spread as widely.
3. Considering BP Sect B: Fig 7.2.1 & 7.7.1, the spatial distribution patterns of languages and religions correspond to a certain extent but are not always similar. Examples: The correspondence between the distribution patterns of (a) Christianity and the Indo-European language family and (b) Islam and Arabic.
4. When looking at PB Sect B: Fig 7.2.1 & 7.7.1, one can speculate that the dominance of the Roman Catholic religion in South America is associated with the dominance of Spanish and Portuguese as languages, both associated with the era when large parts of this continent were colonised by either Portugal or Spain, with the obvious link between language and religion.

Activity 4.2: Universalising and ethnic religions

**Aim of activity:** Distinguish between universalising and ethnic religions.

**Source material:** PB Sect B: 178–189

**Feedback/Pointers to a good answer:**

<table>
<thead>
<tr>
<th>Differences</th>
<th>Universalising religion</th>
<th>Ethnic Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attempts to be global and to appeal to all people in the world</td>
<td>Appeals primarily to one group of people living in one place</td>
</tr>
<tr>
<td>Sub-religions</td>
<td>Christianity, Islam and Buddhism</td>
<td>Hinduism, Judaism and African (mixed universalising)</td>
</tr>
<tr>
<td>Branches of religions</td>
<td>Christianity: Roman Catholicism, Eastern Orthodoxy and Protestantism, Buddhism: Theravada and Mahayana</td>
<td>Deities in Hinduism: Hinduism does not have a central authority or single holy book – each believer selects suitable rituals. The average Hindu has</td>
</tr>
</tbody>
</table>
Islam: Sunni and Shiite allegiance to a particular god or concept within a broad range of possibilities. Example: Vaishnavism (god Vishnu) as Krishna.

Origins of religions

Christianity: Bethlehem/Jerusalem
Buddhism: Lumbini, present-day Nepal
Islam: Makkah (Al-Masjid Al-Nabawi), Madinah, Saudi Arabia.

Hinduism: Central Asia
Judaism: Israel

Holy places vs. landscapes

Holy places associated with the founder's life: Christianity (churches), Islam (holy cities) and Baha'i, Buddhist and Sikh holy places

The calendar and beliefs about the origin of the universe are anchored in the physical environment and particular places. Judaism stems from the agricultural calendar. Chinese ethnic religions derive from cosmogony. Animists believe in animated objects. Hindus emphasise practice, cremation, bathing in the Ganges River

Activity 4.3: State shapes, boundaries and territories

Aim of activity: To sharpen your map-reading skills and help you to understand how the various shapes and different borders/boundaries and territories each have unique pros and cons. Here you will learn that different implications arise from this for each country.


Feedback/pointers to a good answer:

1. List five African countries with different state shapes.
   1. Prorupted state: Democratic Republic of the Congo
   2. Compact state: Kenya
   3. Elongated State: Malawi
   4. Perforated state: South Africa
   5. Fragmented state: Angola

2. You had to give a brief description of each shape and discuss a political advantage and challenge for each shape. It is easier to present the information in table format.
<table>
<thead>
<tr>
<th>State</th>
<th>Description</th>
<th>Political advantage</th>
<th>Challenge for the state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prorupted state</td>
<td>A compact state shape with a protruding extension.</td>
<td>Depending on how boundaries are drawn, it can lead to sharing of and/or better access to resources.</td>
<td>Proruptions may pose a security risk, especially if surrounded by hostile territories. Poor communication may result.</td>
</tr>
<tr>
<td>Compact state</td>
<td>Has a shape that approximates a circle, which lessens the distance between any two points.</td>
<td>Facilitates connections between any two places within a country. Communication more efficient.</td>
<td>Political unrest can easily spread through the whole country. Depending on the location, easy invasion by hostile neighbouring countries is possible.</td>
</tr>
<tr>
<td>Elongated state</td>
<td>Has a long and narrow shape.</td>
<td>Depending on location, it can lead to better access to resources, e.g. along a coastline.</td>
<td>Creates long distances and high transportation costs that may economically and socially isolate remote territories. Poor communication.</td>
</tr>
<tr>
<td>Perforated state</td>
<td>These states have other state territories within them. The perforation may be caused by an entire state.</td>
<td>Smaller countries depend on the perforated state for exportation/importation.</td>
<td>Need to have a good relationship to keep up communication and imports/exports.</td>
</tr>
<tr>
<td>Fragmented state</td>
<td>A state that has two or more disconnected pieces of territory.</td>
<td>These states are harder to attack.</td>
<td>Movement between the mainland and the exclave (minor fragment) requires permission from other states, which may not be granted. Exclaves reject mainland rules. Settlement and administration are more costly.</td>
</tr>
</tbody>
</table>

3. Desert boundaries are usually effective political boundaries because they are hard to cross and are sparsely inhabited. Also, they are stable boundaries.

4. An ethnic boundary is a boundary between countries to separate two ethnic groups.
   Example: Cyprus has two nationalities: Greek and Turkish. It was formed when several Greek Cypriot military officers who favoured unification of Cyprus with Greece seized control of the government in 1974. Turkey invaded Cyprus to protect the Turkish Cypriot minority and the portion of the island controlled by Turkey declared itself the independent Turkish Republic of Northern Cyprus in 1983 (PB Sect B: 203).

milllion Sudanese died. Black Christian and animist ethnicities in the south resisted attempts by the Arab-Muslim dominant government forces in the north to impose a unified nationality based on fundamentalist Muslim principles. In 2011, South Sudan was established as an independent state but fighting carried on as Sudan and South Sudan could not agree on boundaries between the two countries. However, in 2003, a rebellion was launched by Darfur’s black Africans because an ethnic war erupted in Sudan’s westernmost Darfur region whose population resented the discrimination and neglect by the national government. With the Sudanese government’s support the marauding Arab nomads, known as Janjaweed, killed 480 000 people and another 2.8 million fled to desert refugee camps. Sudan’s leaders were charged with genocide and war crimes. On the eastern front, ethnicities fought the Sudanese government over disbursement of profits from oil (PB Sect B: 214).

6. Refugee movements are found in poor and conflict-prone regions. Sudan’s refugees fled to neighbouring countries such as Chad, Uganda, Kenya, Ethiopia and Cameroon.

**Activity 4.4:** (Capstone activity)

**Aim of activity:** After participating in this activity, you will realise that everyone has their own opinion and that there is cultural diversity even within this module that you are registered for. You will also understand that cultural diversity has certain implications but also that there are means of ensuring a peaceful coexistence within a cultural mosaic.

**Source material:** PB Sect B: Ch 7 & 8; SG: 61–66

**Feedback/pointers to a good answer:**

1. You need to explain what a cultural mosaic is: It is a region with an agglomeration of religions and languages, cultures, values, and norms that coexist. Then you need to say how you are part of the cultural mosaic of your country. Your background, religion and language determine the way in which you form part of the so-called rainbow nation.

2. Implications of a cultural mosaic are that people often do not understand each other’s language, norms, values, cultures or religion and that people need to respect each other’s differences.
3. Here everyone’s answer will differ, but a symbol is something like the Holy Cross for Christianity. Select four other examples and explain your understanding of them.

4. You should define ethnicity and nationality separately and then say how each relates to the cultural mosaic. Ethnicity: identity of a group of people who share the same cultural traditions of a homeland or hearth. Nationality: identification with a group of people who share a legal attachment and personal allegiance to a country. These are related to the cultural mosaic because all people have an identity through their culture and traditions besides a legal connection to a country. It is a mixture of traits that makes up the melting pot known as the cultural mosaic.

5. Here you need to discuss the challenges and implications of the cultural mosaic as above and extend it to a lack of understanding and respect for each other’s differences and how it causes conflict especially if one culture or group thinks they are better than others.

6. Answers will vary according to each student’s opinion. But respect for others and their differences would contribute to a peaceful coexistence: “May humanity be our race and may love be our religion.”

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**Learning unit 5 (Making (and earning) a living)**

Enquiries: Prof Rudi Pretorius, +27 11 471 3680, pretorw@unisa.ac.za

**Activity 5.1 (The human development index)**

**Aim of activity:** To understand global development disparities and impacts in developed and developing countries.

**Source material:** PB Sect B: 40 (Fig 8.1), 222 (Fig 9.1.1), 223 (Fig 9.1.3), 227 (Fig 9.3.4), 229 (Fig 9.4.5) & 230 (Fig 9.5.1)

**Feedback/Pointers to a good answer:**

1) First determine where East Asia is, and the countries it includes. From PB Sect B: 233 (Fig 9.1.3) it seems to be China, North Korea, South Korea and Mongolia, with Japan separately, although regarded as part of East Asia by many. South Korea has the highest HDI (above 0.79).

2) Latin American Countries with lowest IHDI: Bolivia, Paraguay and Guyana. The shading for Suriname is not clear and could also indicate “no data”.

3) It is easiest to do this comparison with a table:
<table>
<thead>
<tr>
<th>Country</th>
<th>Literacy rate</th>
<th>Healthcare expenditure</th>
<th>Gender inequality</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>99–100% literate</td>
<td>$1000 and above</td>
<td>Less than 0.4</td>
</tr>
<tr>
<td>Bolivia and Paraguay</td>
<td>90–98% literate</td>
<td>$100–$499</td>
<td>0.7 and above</td>
</tr>
</tbody>
</table>

4) Let’s also use a table to compare GNI and HDI:

<table>
<thead>
<tr>
<th></th>
<th>GNI</th>
<th>HDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>$20000 and above</td>
<td>Very highly developed (above 0.79)</td>
</tr>
<tr>
<td>Bolivia and Paraguay</td>
<td>Below $5000</td>
<td>Low development (below 0.49)</td>
</tr>
</tbody>
</table>

Conclusion: The higher the HDI, the higher the level of income. High HDI and income/wealth levels go hand in hand with low levels of gender inequality, high levels of healthcare expenditure and high literacy levels.

Activity 5.2 (Agricultural practices in South Africa)

Aim of activity: To understand the role of agriculture in the level of development of a country.

Source material: PB Sect B: 256 (Fig 10.6.1), 260 (Fig 10.8.1 & Fig 10.8.3), 261 (Fig 10.8.5 & Fig 10.8.6) & 262 (Fig 10.9.1).

Feedback/pointers to a good answer:
1) The first task refers to PB Sect B: Fig 10.8.1, Fig 10.8.3, Fig 10.8.5, Fig 10.8.6 and Fig 10.9.1. The second task requires application of the information in these maps to South Africa. Let’s begin with a summary of these aspects:

<table>
<thead>
<tr>
<th>Summary for South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level/value</strong></td>
</tr>
<tr>
<td>Maize production</td>
</tr>
<tr>
<td>Milk production</td>
</tr>
<tr>
<td>Wheat production</td>
</tr>
<tr>
<td>Meat production</td>
</tr>
<tr>
<td>Fish production</td>
</tr>
</tbody>
</table>
2) To decide if South Africa is primarily a commercial or subsistence agricultural region, the definitions of these concepts need to be considered first. *Commercial farming region* – Regions where agriculture is pursued to generate products that are primarily for sale. *Subsistence farming region* – Regions where agriculture is pursued to provide food primarily for direct consumption by farmers and their families. *Conclusion*: Based on the relatively high levels of fish, meat and wheat production and even higher production levels for milk and maize, most of the farming enterprises in South Africa is not aimed at subsistence but is rather commercialised.

3) Using PB Sect B: Fig 10.6.1, the following can be observed: In South Africa 5 to 19% of the labour force is engaged in agriculture, whereas it is 20 to 49% for most of sub-Saharan Africa. *Conclusion*: South Africa has a higher level of development than most of the countries in sub-Saharan Africa. Compared to the rest of sub-Saharan Africa, South Africa has a lower percentage of the labour force engaged in agriculture and the country is more involved in commercial than subsistence agriculture.

### Activity 5.3 (Choosing an industrial location)

**Aim of activity:** To consider and understand the factors involved in selecting an appropriate destination for an industry.

**Source material:** PB Sect B: 224 (Fig 9.2.1), 278–279, 281 (Fig 11.4.4), 282–283 (Fig 11.5.1) & 286–287

**Feedback/pointers to a good answer:**

1) **Situation factors to consider**

- **Proximity to inputs** – if you manufacture cars, steel (PB Sect B: Fig 11.4.4) is important since it makes up 50% of a car’s weight. Most regions with the highest steel production are in the Northern Hemisphere, with only Egypt and South Africa of note in Africa. Parts made of other materials, which represent a smaller percentage of the weight of cars, can be manufactured anywhere and then be transported to assembly plants.

- **Proximity to markets** – cars are bulk-gaining products, usually made near their markets. Due to the relatively low GNI per capita in Africa, except for a few countries in the north and south, Africa does not present the most lucrative market for cars in the world.
2) Site factors to consider

**Labour** – labour costs are an important component of the final price of cars and therefore it makes sense to locate a car manufacturing plant where labour is relatively cheap. For most parts of Africa labour costs are relatively low, although they are higher in the countries in the north and south (PB Sect B: Fig 11.7.2).

**Land** – required to establish a car manufacturing plant, but generally there is an abundance of land available in Africa and at reasonable prices. Consequently, land should not be a critical pro or con of any location in Africa.

**Capital** – it is required to fund the project. Projects based in countries regarded as high risk due to an unstable political system, high debt levels or ill-advised economic policies usually don’t attract funding. There is a perception that a number of countries in Africa are characterised by these problems.

Based on this analysis, a choice between countries in northern or southern Africa has to be made. It fits the current manufacturing pattern with South Africa and Egypt as role players (PB Sect B: Fig 11.5.1). Owing to political instability, Egypt might not be the best choice and, besides, Egypt is not located in sub-Saharan Africa. This leaves South Africa as the most probable choice in sub-Saharan Africa.

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**Activity 5.4 (Capstone activity)**

**Aim of activity:** To help you to understand the relationships which exist between various concepts within this learning unit.

**Source material:** PB Sect B: 238–239 & 268–269

**Feedback/pointers to a good answer:**

**Key criteria for sustainable agricultural practices:** Sensitive land management, limited use of chemicals and integrated growing of crops and breeding of livestock.

**Key criteria of the fair-trade model of development:** Protect small businesses and workers (focus: distribution of benefits to local farmers instead of only maximising profits). Also aim to comply with minimum environmental and safety standards.

**Possible relationship between sustainable agricultural practices and the fair-trade model of development:** Both not about the maximisation of profits, but about the benefits for the local community (sustainable agriculture for the environment and fair trade for people).
Learning unit 6 (Resources: use and abuse thereof)
Enquiries: Prof Rudi Pretorius, +27 11 471 3680, pretorw@unisa.ac.za

### Activity 6.1 (Fossil fuels)

**Aim of activity:** To understand the role of external factors in fossil fuel prices.

**Source material:** PB Sect B: 351 (Fig 14.4.3)

**Feedback/Pointers to a good answer:**
1) & 2) PB Sect B: 351 (Fig 14.4.3) has to be studied, with the identification of two oil price increases after 1975: We selected 1979 and 2001–2008.
3) Reason why these price increases occurred:
   - 1979: Trigger – revolution in Iran.
   - 2001-2006: Trigger – increased demand for oil by growing economies of India and China.

### Activity 6.2 (Energy use)

**Aim of activity:** To understand various aspects regarding the use of fossil fuels to provide energy.

**Source material:** PB Sect B: 352 (Fig 14.5.1), 354 (Fig 14.4.2) & 360 (Fig 14.9.2)

**Feedback/pointers to a good answer:**

**Task 1**
1) & 2) PB Sect B: 352 (Fig 14.5) has to be studied. Top six countries using nuclear energy: USA (incl. Alaska), France, Russia, Germany, South Korea and Japan
3) **Reason why a country might use nuclear energy:** It is a relatively clean type of energy.
   **Reason why a country might choose NOT to use nuclear energy:** Safety concerns

**Task 2**
1) **Top four regions of world with highest concentration of air pollution** – PB Sect B: 360 (Fig 14.9.2): Focus on the red colour. Regions: eastern part of North America (USA), the central parts of Europe (Germany), the eastern parts of Asia (China) and the interior of Southern Africa (Gauteng/Mpumalanga, South Africa.)
2) **Comparison of identified regions with information in PB Sect B: 354 (Fig 14.4.2)** regarding coal reserves: The regions with the highest concentration of air pollution are among the top ten countries in the world based on production and reserves of coal.
3) Conclusions about the identified regions’ fuel sources and associated air pollution levels: Regions with a high reliance on coal as an energy source will have high levels of air pollution.

Activity 6.3 (Capstone activity)

**Aim of activity:** To help you understand your environmental impact on a global scale

**Source material:** PB Sect B: 364–365; http://www.un.org/sustainabledevelopment/sustainable-consumption-production/

**Feedback/Pointers to a good answer:**

**Goal 12 of the SDGs:** “Ensure sustainable consumption and production patterns”

Reading and background: Read about this goal by doing a Google Search with the key words “SDG’s Goal 12”, and you are bound to get a large number of hits. Since you are required to give your opinion on the possibility of reaching this sustainable development goal, you can steer your search in this direction.

**Possibility to achieve it:** Since the planet is on a trajectory in which the western way of doing things has become a prime ambition, the plea to consume and produce less presents a paradox. This SDG implies that humankind needs to do more with less, but there is a great deal of resistance. It poses a threat to “business as usual” but offers significant opportunities.

**How you can help to contribute to reaching this goal:** A personal contribution could be to recycle/reuse waste generated by your household

**What impact your individual contribution might have:** This will contribute to a lower rate at which resources are consumed and depleted.

Learning unit 7 (Geographic data: nature, sources and representation)

Enquiries: Mr Carel Greyling, +27 11 670 9464, egreyla1@unisa.ac.za

Activity 7.1 (Getting familiar with the geographic grid in South Africa)

**Aim of activity:** To improve your understanding of absolute location and the use of the geographic grid in the South African context.

**Source material:** PB Sec A: 52–55; SG: 103–108
Feedback/pointers to a good answer:
The goal of the activity was, in fact, not to get the most accurate reading, but to get you to be more comfortable with the use of the geographical grid. Therefore, your answer would have been fine if you only provided coordinates up to degrees and minutes. It would have been hard to define seconds using the map.

Remember to provide the latitude first (indicated with a “S” or “N”) and the longitude second (indicated with a “E” or “W”). This is our estimation of the absolute location for each of the cities:
- City of Cape Town: 33°55'S; 18°15'E
- Nelson Mandela Bay: 34°5'S; 25°22'E
- Buffalo City: 33°0'S; 27°40'E
- eThekwini: 29°55'S; 30°27'E

For the second part of the activity you had to convert the coordinates of Bloemfontein into decimal degrees. In other words, you had to change the format from degrees, minutes and seconds to just the degree and a decimal number. This means you had to divide the seconds of both longitude and latitude by 60 to obtain the decimal number:
- 29°07′15″S; 26°12′50″E = 29°07,25'S; 26°12,83'E

Then you divide the minutes also by 60 to obtain decimal degrees:
- 29°07,25'S; 26°12,83'E = 29,12°S; 26,21°E

Activity 7.2 (Calculating bearings)

Aim of activity: To practise to give directions in terms of true and magnetic bearing

Source material: SG: 109–113

Feedback/pointers to a good answer:
(1) The bearing from Point A on Point F is roughly 113 degrees. Precise measuring on the figure to be used for this activity is impossible.

(2) The bearing from Spot height 686 on Spot height 802 is roughly 100 degrees. A bearing estimate of 5 degrees more or less than that would be in order as well. From the map of De Doorns you had to obtain the following information:
a. Mean magnetic declination = 25°10’ west of true north. Therefore, you need to add 25°10’ degrees to the bearing you estimated. This is due to the fact that if the magnetic declination is westwards, it increases the angle of the bearing as measured: 100° + 25°10’ = 125°10’

b. While true north was measured in 2015, you need to do the calculation for 2020.

c. Mean annual change of the magnetic declination is 6’ westwards. This means that you need to add the annual change to the measured degrees. You can further deduce that since it is 5 years onwards, the magnetic north would have shifted by then with 5 x 6’ = 30’ minutes, which need to be added to calculated bearing: 125°10’ + 30’ = 125°40’

(3) Firstly, you would need to work out the change in magnetic north for 2018. Therefore 4 years x 30’ eastwards = 120’ = 2 degrees. An eastwards direction means that you need to subtract this from the magnetic declination. Therefore 20° – 2° = 18°. Magnetic north is therefore 18° west of true north in the year 2018. To find the correct point, you would need to subtract 18° from 273°, which will provide you with the supposed measured angle.

Activity 7.3 (Categorising thematic maps)

**Aim of activity:** To create an awareness of how data can be presented on maps.

**Source material:** Due to the nature of the activity, the whole textbook should be used.

**Feedback/Pointers to a good answer:** This was a relative easy and fun activity. You had to look for examples of different maps in your prescribed textbook. I chose the following examples (PB Sect B):

- Graded symbol map: PB Sect B: 304, Hierarchy of world cities
- Cartogram: PB Sect B: 118, Population cartogram
- Flow map: PB Sect B: 146–147, Sources and destination
- Choropleth map: PB Sect B: 124, Infant mortality rate
Isoline maps: PB Sect B: 45, January circulation patterns
Qualitative map: PB Sect B: 168–169, Distribution of Languages

Here are some definitions to provide clarity:

- Graduated symbol map: Used when the size of a symbol indicates some statistical value, such as the population of a city.
- Cartogram: A map on which some sort of statistical value is shown, and the shape of features is distorted to indicate this value.
- Flow map: A flow map usually shows the movement of features or objects, typically immigration maps.
- Choropleth map: Uses differences in shading and colouring to indicate some statistical value.
- Isoline map: Uses lines to indicate places with similar variable/factor values.
- Qualitative map: Shows the extent of features whereas a quantitative map shows exact numbers.

Activity 7.4 (Using and presenting map scales)

Aim of activity: To provide an opportunity for you to become confident in using and presenting map scales.

Source material: SG: 118–125

Feedback/pointers to a good answer:

(1) It is always a good idea to first convert all your lengths to the same type of measurement. Therefore, 105 m equals 105 000 mm. So, in this instance 10.5 mm on the map represents 105 000 mm in reality. You want to know how much 1 mm presents. So, you would need to divide the actual length of the field in the represented length on the map. Remember that it is a ratio, and you need to get the number on left to 1. Divide 10.5 with itself and what you do on the left needs to be done on the right side as well:

\[
\begin{align*}
10.5 \text{ mm} & : 105 000 \text{ mm} \\
10.5 \text{ mm} & : 10.5 \text{ mm} \\
= & : 1:10 000 \quad (1 \text{ mm on the map represents } 10 000 \text{ m in reality.})
\end{align*}
\]
(2) This task requires you to convert 20 000 mm into metres. There are a thousand millimetres in a meter; therefore it converts to 20 m. And the answer then would be:

(a) 1 mm on the map represents 20 m in reality.

(b) 0 200 400 600 800 metres 

(3) The first thing you would need to answer this question is to determine the distance between you and the lodge. Therefore:

\[ 5.5 \text{ cm} \times 250 \text{ 000} \text{ (scale factor)} = 1375 \text{ 000 cm} \]

Then convert the answer to kilometres:

\[
\frac{1375 \text{ 000 cm}}{100 \text{ 000}} = 13.75 \text{ km}
\]

Now that you know the distance between you and the lodge, you need to work out if you will have enough time. If you drive a distance of 60 km in 60 min, you technically drive 1 km in 1 min (remember this is also a ratio of 1:1). So, in 10 min you drive only 10 km and will therefore be a few minutes late.

(4) Once again you will need to convert the distances on the plan to their actual length in reality. In other words, you have to multiply the measured distance with the scale factor: \((14 \text{ mm} \times 10 \text{ 000}) \times (6 \times 10 \text{ 000})\)

\[ = 140 \text{ 000 mm} \times 60 \text{ 000 mm} \text{ in reality (or } 140 \text{ m} \times 60 \text{ m)} \]

Now you need to find out how many bricks fit into this space. You can do this by simply dividing the area of the place by the area of one brick. The drive way is 140 m \( \times 60 \text{ m} = 8 \text{ 400 m}^2 \) and one brick equals \(0.222 \text{ m} \times 0.106 \text{ m} = 0.023532 \text{ m}^2\)

Therefore: \(8 \text{ 400 m}^2 / 0.023532 \text{ m}^2 = 356 \text{ 960 bricks}.\)
Activity 7.5 (Calculating a gradient from a contour map)

Aim of activity: To practise calculating a gradient by using a contour map

Source material: SG: 130

Feedback/Pointers to a good answer:
The formula used to calculate gradient is VI/HE. You need to remember that this is a ratio. Therefore, you never really divide the vertical interval by the distance. In fact, you can write it from the start as VI:HE so that you do not get confused.

To determine VI you need to subtract the height of Point B (740 m) from that of Point A (530 m). The height of A and B can be deduced from the contour lines, which changes with increments of 20 m. Point A is halfway between the 520 m and 540 m contour lines, therefore its height is 530 m. Now we can calculate VI = 740 – 530 = 210 m

To work out HE, the distance between Point A and B, you need to measure the distance on the map (roughly 20 mm) and then multiply it with the scale factor (50 000). Now we can calculate HE = 20 mm X 50 000 = 1 000 000 mm in reality = 1 000 m.

To work out the gradient ratio, remember to convert each value to the same measurement format. Both need to be in either millimetres or metres. Gradient = VI/HE, but you can write VI/HE as …… : ……. , because it is a ratio. Therefore:

Gradient = VI:HE = 200:1 000

For the ratio to make sense, you need to reduce the 210 m to 1 and divide it by itself. What you do on the left side of the semi-colon (:) you need to do on the right side as well. Therefore:

= 200 : 1 000
   200 200
= 1 : 5

Therefore, for every 5 metres that you walk towards B, you climb 1 meter!

Take note: Your answer may differ slightly due to the measurement of HE. Give or take two millimetres on either side.
Activity 7.6 (Capstone activity for Module GGH1501)

Aim of activity: To provide you with an opportunity to summarise what you have learned in the module by comparing the geographical worlds of two countries of your choice.

Source material: Due to the nature of this activity, you need to use both your prescribed textbook and your study guide document intensively.

Feedback/pointers to a good answer:
This activity depends on whether or not the countries are applicable. Here are a few examples that I find appropriate:

- United Kingdom vs Madagascar
- Germany vs Angola
- Japan vs Jamaica

With an activity of this scope and format it is important to keep to the task description and framework. This is the ideal activity to practise your essay writing skills because an introduction, body and conclusion are required. Typically, a good introduction sets up the topic you want to discuss. You can introduce your countries and state the reasons why you chose them. In the body it is important to respond to the questions stipulated in the framework. A detailed paragraph for each question and a comparative discussion of each country would have been sufficient. The framework is structured in a specific way and you will discuss each country according to concepts that we want you to understand and learn in this module. This includes population dynamics, the physical landscape and resources. A good conclusion links with the questions or statements in your introduction. It ties all the loose threads together and brings your idea and thoughts to a close. A paragraph or two on the similarities or differences between the two countries would have been sufficient.

3 COMMENTS ON SELF-TEST QUESTIONS IN LEARNING UNITS 4, 5, 6 and 7

Learning unit 4 (The global cultural mosaic)
Enquiries: Mr Curtis Mashimbye, +27 11 471 2107, mashinc@unisa.ac.za

Note: These comments were originally compiled by Ms Claire Fordred during Semester 1 of 2017 and was slightly edited before including it here.
<table>
<thead>
<tr>
<th>Question</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>PB Sect B: 169</td>
<td>PB Sect B: 169 states that Indo-European is the largest language family.</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>PB Sect B: 199</td>
<td>Look at PB Sect B: 199, where you can observe the African continent, locate Malawi and count the landlocked countries in Africa.</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>PB Sect B: 197</td>
<td>Looking at the map you will see that India is one of two countries that share their borders with Nepal.</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>PB Sect B: 169</td>
<td>Sino-Tibetan is found in South Asia – check the location of South Asia and the countries included in the map showing the development regions of the world in the prescribed book.</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>PB Sect B: 171</td>
<td>Vocabulary, pronunciation and spelling differ throughout the United States of America.</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>PB Sect B: 178</td>
<td>South America’s predominant religion is Roman Catholic.</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>PB Sect B: 199</td>
<td>By a process of elimination, you will realise that Lesotho is not a perforated state.</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>PB Sect B: 202</td>
<td>You will note that a border fence and border post are not regarded as physical boundaries of states.</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>PB Sect B: 214</td>
<td>By a process of elimination, you will realise that Darfur, the westernmost region of Sudan, was devastated by a genocide involving 480 000 black farmers.</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>PB Sect B: 197</td>
<td>Using the map legend on p 197 of PB Sect B, you can calculate that since 1980 four countries on the African continent became members of the UN.</td>
</tr>
</tbody>
</table>

**Learning unit 5** (Making (and earning) a living)
Enquiries: Prof Rudi Pretorius, +27 11 471 3680, pretorw@unisa.ac.za

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<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>PB Sect B: 223</td>
<td>By comparing the given countries, it is clear that Germany has the highest IHDI, obtaining a score of above 0.79.</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>PB Sect B: 225</td>
<td>This graph shows that from 1970 to 1995 the secondary sector’s contribution to the economies of both developed and developing countries was roughly the same.</td>
</tr>
</tbody>
</table>
Learning unit 6 (Resources: use and abuse thereof)
Enquiries: Prof Rudi Pretorius, +27 11 471 3680, pretorw@unisa.ac.za

<table>
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<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>PB Sect B: 344</td>
<td>Food preferences illustrate how cultural influences can affect the value of resources. This is because cultural values assist people to identify things as resources in order to sustain life.</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>PB Sect B: 344–345</td>
<td>The price of a resource is determined by how easy or difficult it is to access it, and if the supply is sufficient to meet the demand.</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>PB Sect B: 347</td>
<td>The cap-and-trade system is an example of a market-based solution aimed at reducing air pollution.</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>PB Sect B: 362</td>
<td>This question requires identification of a country that maintains its forested land areas. The map indicates that all countries, except South Africa, have experienced a change in their forested land areas.</td>
</tr>
</tbody>
</table>
5 1 PB Sect B: 350 By considering the information on the map, it should be clear that the Middle East and Europe are the world’s largest exporters and importers respectively.

6 3 PB Sect B: 355 The associated pie charts illustrate that Brazil produces the smallest amount of lithium.

7 1 PB Sect B: 356–359 This question requires the identification of false items. Bear in mind that agricultural commodities are the largest consumers of water resources.

8 4 PB Sect B: 354–355 The only true statement is that technological advancements have the ability to influence the price of minerals.

9 3 PB Sect B: 360 This question involves spatial association – higher nitrogen dioxide concentrations are found in areas with higher population densities, for example, the USA and China.

10 2 PB Sect B: 364–365 Sustainability is not solely concerned with conservation, but it is multifaceted, unlike the concept of conservation.

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**Learning unit 7** (Geographic data: nature, sources and representation)

Enquiries: Mr Carel Greyling, +27 11 670 9464, egreyla1@unisa.ac.za

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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>PB Sect A: 55</td>
<td>A map would never have a 1:1 scale ratio.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SG: 118–119</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>PB Sect A: 55</td>
<td>A small scale refers to the decimal size of the scale and not the size of an area. In other words, a map of a large area would have a small scale, while a map of a small area would have a large scale.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SG: 118–119</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>PB Sect A: 52–55</td>
<td>Parallels are called latitudes. They run parallel to the equator and will reduce in length as you move towards the poles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PB Sect B: 10–11</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>SG: 115–117</td>
<td>The trickiest symbol would be recreational ground. Places which occupy a large section of land will always be represented as a polygon.</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>PB Sect A: 56–59</td>
<td>Read on the topic “projection” in your prescribed textbook and in the study guide.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PB Sect B: 9</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>SG: 114</td>
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</tr>
<tr>
<td>6</td>
<td>2</td>
<td>PB Sect A: 56 SG: 118–119</td>
<td>By measuring the distance of the first black section of the scale bar (1 cm), you can relate that with the correct answer.</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>SG: 118–119</td>
<td>You can easily deduce the answer by using the scale bar.</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>SG: 121–124</td>
<td>The picnic area is 1 cm by 0.3 cm as measured on the map. This is similar to 500 m by 150 m in reality, which means it is 75 000 m². Divide this number by the size of one family space (10 m²), which means that 7 500 spaces are available on the beach.</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>SG: 109–113</td>
<td>2022–2016 = 6 years difference, where the magnetic north shifted by 6' per year. 6 x 6 = 36' eastwards. Eastwards always mean that you need to subtract it from the magnetic north. Therefore the answer is Option 4.</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>SG: 109–113</td>
<td>You do not need to measure A to B, since you can see that B is directly to the east of A and therefore 270°. The answer is therefore 270° + 3°24’ = 273°24’.</td>
</tr>
</tbody>
</table>