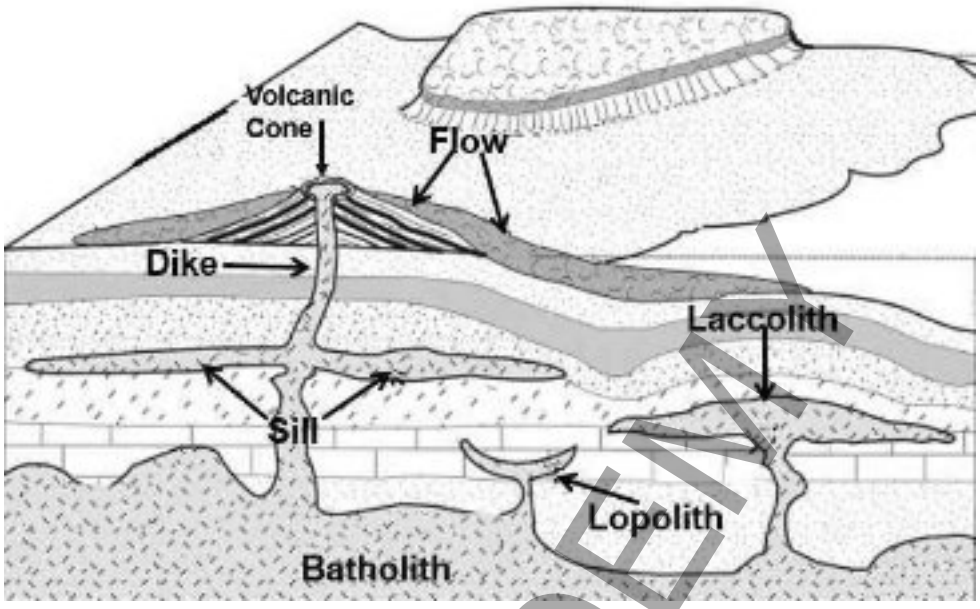
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2.2 Refer to the sketch on intrusive landforms. Choose the correct landform from the sketch that the description below refers to. Write only the landform next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK.



Source: https://www.google.com/search?q=igneous+intrusions+diagram

2.2.1 **Batholith**

2.2.2 **Dike**

2.2.3 **Lava flow**

2.2.4 **Laccolith**

2.2.5 **Sill**

2.2.6 **Lopolith**

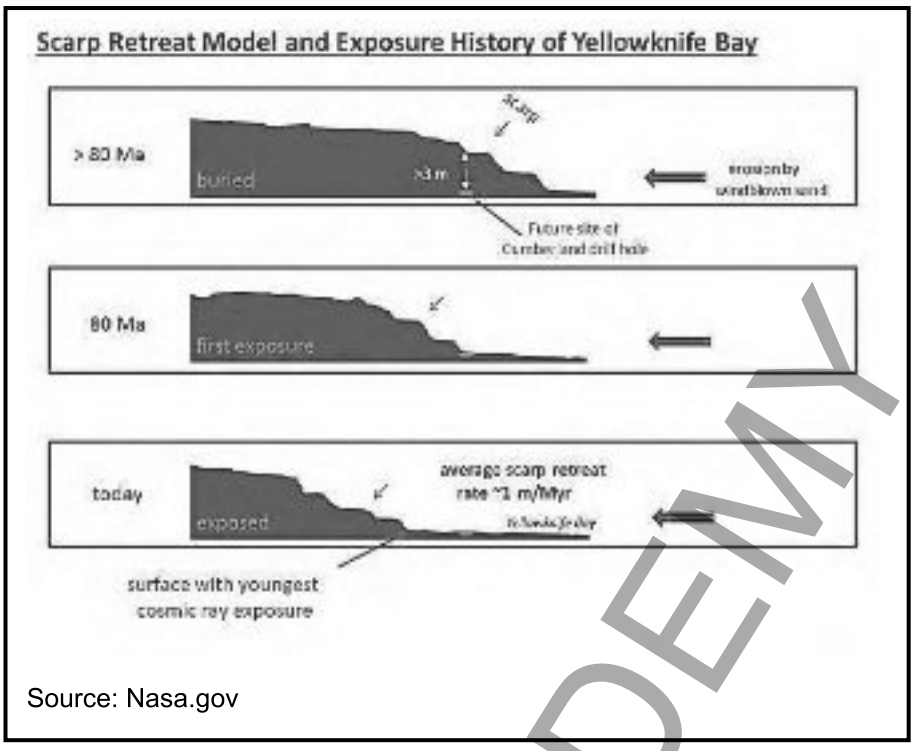
2.2.7 **Volcanic cone**

(7 x 1)
(7)

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2.3 Study the figure below of scarp retreat to answer questions that follow.



Source: Nasa.gov

2.3.1 Define the concept of *scarp retreat.* (1 x 2)
- **When a scarp/ cliff wears back parallel to its original position (2)** (2)
  Concept

2.3.2 Name the cap rock that is likely to be found on this landscape. (1 x 2)
- **Dolerite sill (2)** (2)

2.3.3 State the rate at which this landscape experienced scarp retreat.
- **1m per million years (1)** (1 x 1)
(1)

2.3.4 Give TWO evidences from the diagram that scarp retreat has taken place. (2 x 1)
- **Surface area of the landscape has been reduced (1)** (2)
- **Natural deposits have been exposed (1)**

2.3.4 Explain ONE advantage and ONE disadvantage of scarp retreat.
- **Advantage: reduces the vertical distance to access minerals and resources such as water underground (2)** (2 x 2) (4)
- **Disadvantage: disturbs habitats and ecosystems in the area(2)**

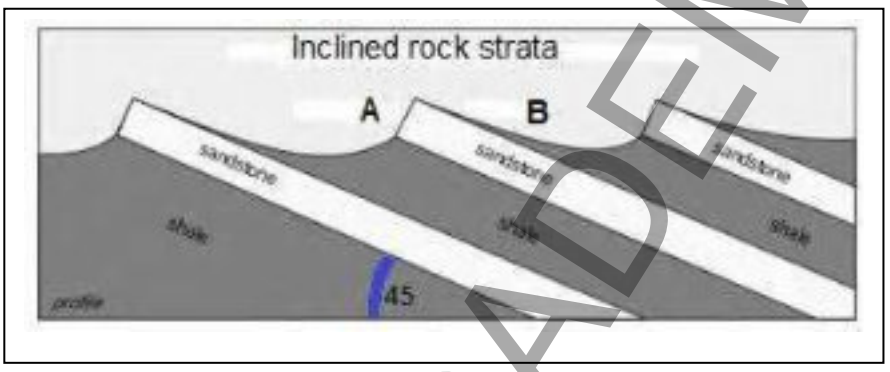
2.3.5 Yellowknife Bay is an area that experiences a maritime climate. Discuss how a maritime climate and a continental climate would likely influence the rate of scarp retreat. (2 x 2)
- **Maritime climate would increase the rate of scarp retreat as there will be more rainfall serving as an agent of erosion(2)** (4)
- **Continental climate would decrease the rate of scarp**

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retreat due to less humidity in the area that would promote weathering and erosion (2)

2.4 Refer to the figure below depicting inclined rock strata and answer the questions below



2.4.1 Name the type of inclined rock strata shown in the image above. (1 x 1) (1)

- **Homoclinal ridge (1)**

2.4.2 Identify slope A and B (2 x 1) (2)

- **A: scarp slope(1)**
- **B: dip slope(1)**

2.4.3 Differentiate between sandstone and shale in terms of hardness.

- **Sandstone: hard rock OR more resistant to erosion (1)** (2 x 1) (2)
- **Shale: soft rock OR less resistant to erosion (1)**

2.4.4 Discuss the suitability of slope B for farming. (2 x 2) (4)

- **Gentle slope allows for more infiltration of water (2)**
- **Soft rock is more permeable which promotes crop growth because of water (2)**

2.4.5 Explain how humans utilize the inclined rock strata named in **Q2.5.1**

- **Recreational purposes –hiking (2)** (3 x 2) (6)
- **Used for farming (2)**
- **Forestry (2)**
- **Protection during war (2)**
- **Tourist attraction sites (2)**
- ***Any three***

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2.5 Refer to the images below to answer the below questions.

A



Source: https://www.torsofdartmoor.co.uk/

B



Source: https://en.wikipedia.org/wiki/Fairview_Dome

2.5.1 Identify the landforms associated with massive igneous rocks in photo **A** and photo **B**. (2 x 1) (2)

- **A: tors (1)**
- **B: granite dome (1)**

2.5.2 Name ONE characteristic of massive igneous rocks that is evident in the sketch. (1 x 1) (1)

- **Rocks have no strata/ bedding planes (1)**

2.5.3 From what igneous intrusions do the landforms in photo **A** and photo **B** originate? (2 x 1) (2)

- **A: Batholith(1)**
- **B: Laccolith (1)**

2.5.4 How are these landforms in photo A and photo B exposed on the earth's surface? (1 x 2) (2)

- **Erosion of sedimentary layers on the surface (2)**

(4 x 2) (8)

2.5.5 In a paragraph of approximately EIGHT lines, explain the role of weathering in the formation of these two landforms.

<u>Tors</u>

- **Water seeps into joints of igneous rocks underneath the earth's surface (2)**
- **This causes chemical weathering to take place (2)**
- **Chemical weathering causes the rock to break into rectangular blocks (2)**

<u>Granite dome</u>

- **Granite domes usually arise from batholiths (2) or laccoliths, which intrude into and**
- **penetrate sedimentary layers (2).**
- **Erosion and weathering then occurs (2) until a large granite**
- **mass appears on the land surface(2)**

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Accept Any Relevant Answers [60]

TOTAL SECTION A: 120

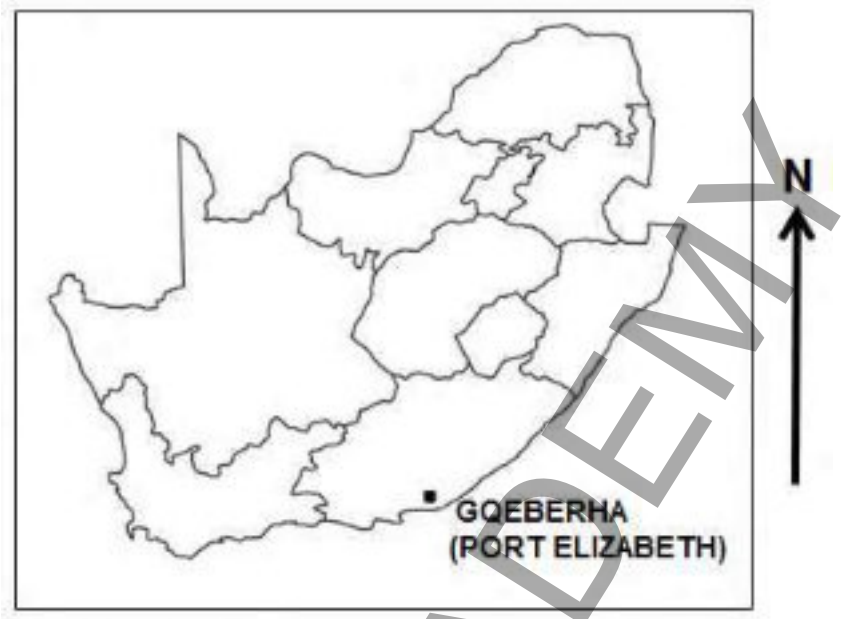
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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON GQEBERHA (PORT ELIZABETH)



Coordinates: 33°57'S; 25°36'E

Gqeberha, previously named Port Elizabeth, and colloquially referred to as P.E., is a major seaport and the most populous city in the Eastern Cape province of South Africa.

Port Elizabeth was founded in 1820 by Sir Rufane Donkin, who was the governor of the Cape at the time. He named it after his late wife, Elizabeth, who had died in India. The Donkin Memorial in the CBD of the city bears testament to this.

Source: https://en.wikipedia.org/wiki/Gqeberha

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3.1 MAP SKILLS AND CALCULATIONS

3.1.1 **C Longitude(1)** (1 x 1) (1)

3.1.2 **A Westerly(1)** (1 x 1) (1)

3.1.3 **C 33°56'19"S and 25°36'00"E.** (1 x 1) 1)

Refer to the orthophoto map.

3.1.4 Calculate the gradient between spotheight 59 in block B2 and spotheight 57 in block E5. (4 x 1) (4)

$$\text{G=} \frac{\text{Vertical interval}}{\text{Horizontal equivalence}}$$

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VI=59m-57m=2m (1)

HE=15.7cmx100=785m (1)

= $\frac{2}{1570}$(1)

= 1: 785 (1)

3.1.5 Using your answer from above, explain the suitability of the slope where the runway from 6 to 7 lies on. (1 x 1) (1)

- **The gradient is gentle(1)**

3.1.6 Calculate the distance in kilometres of the national freeway from where it starts in block B1 to where it ends in block A2. (2 x 1) (2)

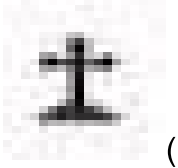
Actual Distance = map distance x map scale
= 7.9 (1) x 0.5 (Range: 7.8cm – 8cm)
= 3.95km(1)

3.2 **MAP INTERPRETATION**

3.2.1 Name the province that Gqeberha is found in. (1 x 1) (1)

- **Eastern Cape (1)**

3.2.2 Draw the symbol used to represent the Donkin Memorial in block D4 mentioned in the extract. (1 x 1) (1)



(1)

3.2.3 State ONE dominant recreational activity visible in block D2. (1 x 1) (1)

- **Hiking (1)**

3.2.4 Give a possible reason for the communication towers in blocks E4 and E5. (1 x 2) (2)

- **To have live communication with airplanes that are going to take off or make landing. (2)**

3.2.5 Refer to the topographic map, and explain why the highest altitude on the map is less than 150m. (1 x 2) (2)

- **Gqeberha is close to the ocean which has the lowest altitude (2)**

3.2.6 Name the type of road that leads traffic to and fro the airport in E4 and E5. (1 x 1) (1)

- **Arterial route (1) (Accept Main road)**
-

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3.2.7 Explain TWO roles that greenbelts play in the environment of Gqeberha on the map extract. (2 x 2) (4)

- **Aesthetically pleasing (2)**
- **Recreational areas (2)**
- **Filters polluted air (2)**
- **Provides clean air (2)**

Any two

3.3 **GEOGRAPHICAL INFORMATION SYSTEM**

3.3.1 The firebreak in block D2 on the topographical map is a type of buffering. State the role of this buffering. (1 x 1) (1)

- **To prevent and control fires from spreading (1)**
-

3.3.2 Define the term *buffering.* (1 x 2) (2)

- **A zone of demarcation created around an area of interest(2)**
  (Concept)

3.3.3 The displayed data on the orthophoto map was taken using remote sensing.

a) What type of data is used to show the location of Gqeberha? (1 x 1) (1)

- **Spatial data (1)**

b) Define the concept of *remote sensing.*

- **The collection of geographical data from a distance(2)** (1 x 2) (2)
  (Concept)

c) Name TWO ways in which geographical data can be captured remotely. (2 x 1) (2)

- **Using satellites (1)**
- **Drones (1)**
- **Aircrafts mounted with cameras (1)**

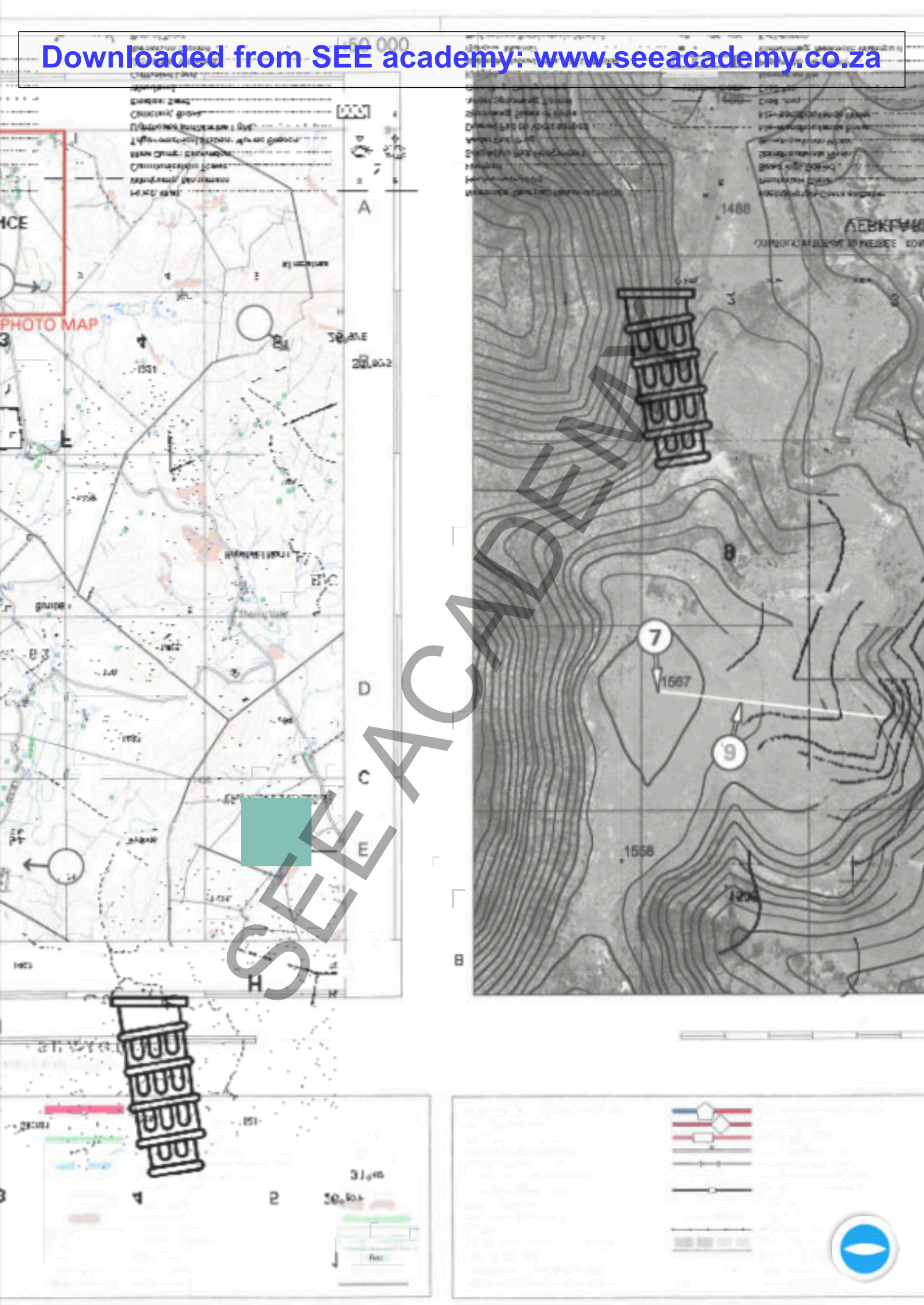
Any two

TOTAL SECTION B: 30

GRAND TOTAL: 150

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