

3

91429



914290



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!



SUPERVISOR'S USE ONLY

Level 3 Geography, 2018

91429 Demonstrate understanding of a given environment(s) through selection and application of geographic concepts and skills

9.30 a.m. Friday 23 November 2018
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of a given environment(s) through selection and application of geographic concepts and skills.	Demonstrate in-depth understanding of a given environment(s) through selection and application of geographic concepts and skills.	Demonstrate comprehensive understanding of a given environment(s) through selection and application of geographic concepts and skills.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

Pull out Resource Booklet 91429R from the centre of this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–11 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Merit

TOTAL

14

ASSESSOR'S USE ONLY

INSTRUCTIONS

Read the resource booklet and the questions in this booklet before you begin your written answers.

Select and apply a range of geographic skills to comprehensively analyse the various geographic concepts as they apply to Greenland.

QUESTION ONE: GREENLAND'S ENVIRONMENT

Refer to **Resources A–E** on pages 3–7 of the resource booklet when answering this question.

(a) Describe in detail Greenland's natural environment.

Select and apply a range of geographic skills to support your answer.

Greenland is the world's largest island with a land area of 2 166 086 km² and lies in the North Atlantic ocean. Two thirds of the island lies within the Arctic circle resulting in Greenland have a ice ~~sth~~ sheet that covers ^{over} 4/5's of the island's total land area. The ice sheet has a average thickness of 1500m, however this is changing as the ice is melting away at an average of 286 billion tonnes per year. The temperature in Greenland is highest in July where it almost reaches 0°C and lowest in March where it can get close to -32°C. In the northerly parts of Greenland ^(cont. due) permafrost occurs and the further ^{distance} away from the Northpole the permafrost becomes discontinuous. The natural environment of Greenland is mineral rich. Parts of the island that have been explored has shown that there are a variety of minerals such as iron ore, copper, zinc, gold and uranium.

- (b) Comprehensively explain how the natural environment influences the cultural environment of Greenland.

ASSESSOR'S
USE ONLY

The cold natural environment of Greenland creates a negative affect on the cultural environment of Greenland. Greenland has excellent potential for the mining of minerals, however, the large ice sheet make exploration difficult. People living in Greenland are primarily of Inuit ~~of~~ or Eskimo descent and account for almost 90% of the 56,000 people who live there. People from Greenland hold Danish citizenship so they are easily able to move to denmark. The natural environment of Greenland influences the cultural environment as the standard of living and job opportunities are lower than those of Denmark. Due to the environment Greenlands economy has long been based on fishing which accounts for 90% of its exports. Over the years the fishing industry has had problems with over fishing and fluctuating prices, so Greenland decided to use the beauty of the natural environment to grow~~n~~ the tourist industry. Tourists go to Greenland to experience whale watching and to see the fjords and ice bergs. Due to the harsh Greenland enviroment living there would be difficult and this is shown through the ~~large~~ small population that live permanantly on the island.

A4

QUESTION TWO: POTENTIAL FOR MINING

Refer to **Resource F** on page 7 of the resource booklet when answering this question.

(a) Identify the top THREE industries/areas of employment in 2015 as shown in Figure 10.

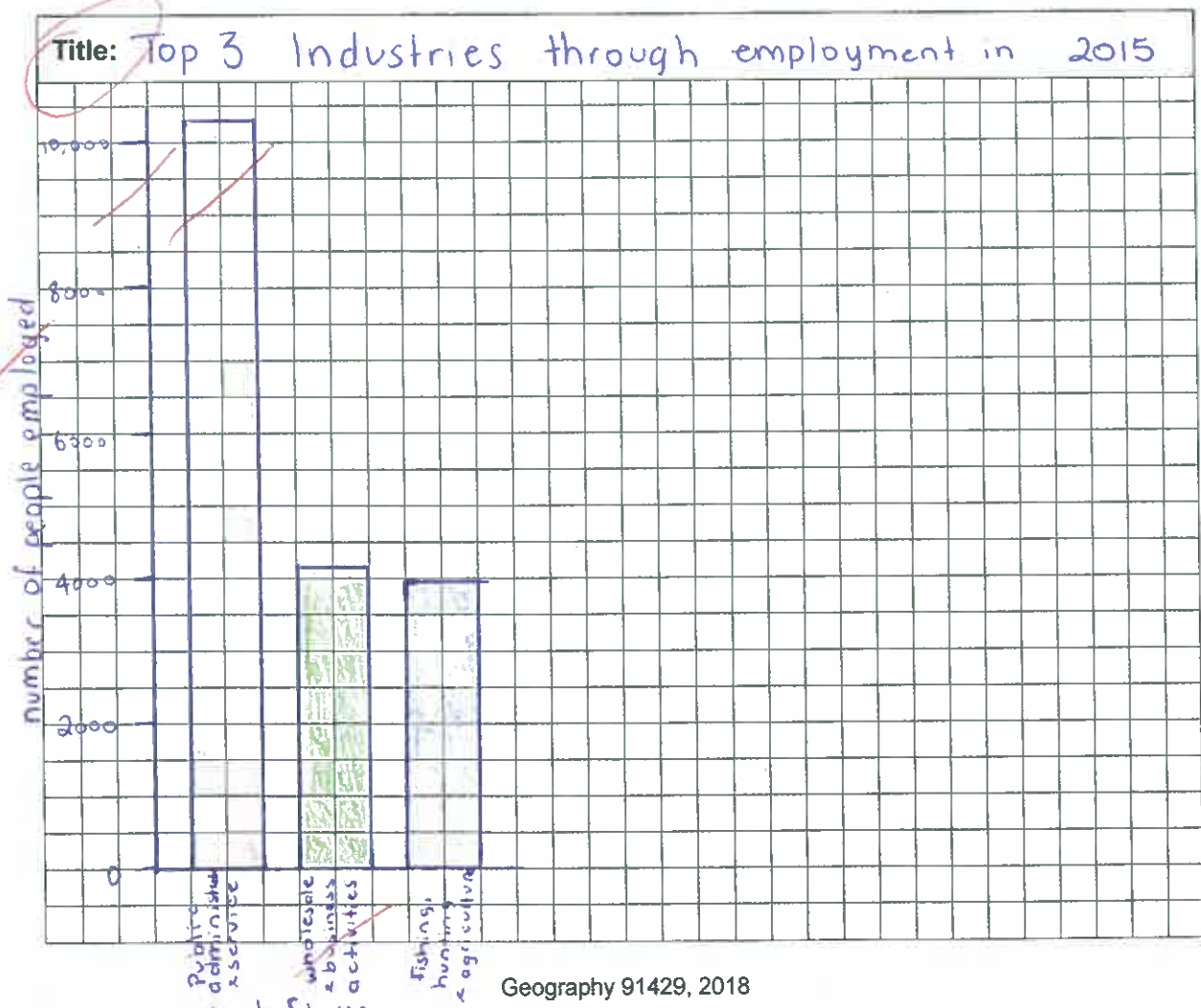
- (1) Public Administration & Service
- (2) Wholesale & business activities
- (3) Fishing, hunting & agriculture

(b) Calculate the percentage of people who were employed in mining and quarrying in 2015. You may use the space below for any calculation required.

Percentage: 0.48%

(c) Construct the most appropriate graph to show how many people were employed in the top three industries in 2015.

Use correct graphing conventions in your answer.



- (d) Referring to your responses to parts (a), (b) and (c), and using **Resources G–K** on pages 8–11 of the resource booklet, comprehensively analyse two different perspectives on the potential for mining in Greenland.

Perspectives may include, but are not limited to: economic, environmental, social, indigenous, and political.

The melting ice sheet and glaciers is creating more area available for the extraction of minerals ~~and~~. When looking ^{at} the ~~the~~ situation from a environmental perspective mining in Greenland could result in worsening the climate change. Climatologists warn that fossil fuel extraction will further contribute to the rising Arctic temperature, which are causing the melting of the ice sheet. Waste rock from the mining process contains radioactive by products such as uranium and emits radon-222 meaning that it needs to continuously monitored after it has been dumped. Locals fear that radioactive dust will fall on these farmland and neighbouring settlements.

From an economic perspective, mining would be the best option for Greenland. Small towns in Greenland, like Narsaq, as estimated by some geologists to hold 50% of the world's rare earth ~~minerals~~ minerals.

~~Narsaq~~ Narsaq's population of approximately 1500 has decreased by 10% over the last 10 years due to unemployment rates as people leave looking for a better lifestyle. BME a Australian owned company has spent nearly US\$80 million making plans for an open pit mine in Kvanefjeld, near Narsaq. The company has promised 2000 new jobs giving people opportunity to make a better living. This is just one area, if mining ~~the~~ were to go ahead on multiple areas of the island ^{it would} give Greenland a major

mb

QUESTION THREE: THE FUTURE FOR GREENLAND

ASSESSOR'S
USE ONLY

Refer to **Resources A–K** on pages 3–11 of the resource booklet when answering this question.

If the Greenland ice sheet continues to melt at the current rate, there could be significant consequences for Greenland's people, economy, and environment.

Discuss the following statement and make a justified recommendation about the best option for Greenland's future:

Greenland must embrace the opportunities for uranium mining.

Refer to at least one of the geographic concepts on page 2 of the resource booklet and specific information from the other resources to support your answer.

The Greenland Ice Sheet is continuing to melt, meaning that there could be significant consequences for Greenland's people, economy and environment.

I think that the culture, environment and economy of Greenland need to be ready for change in the near future. ~~As~~ The statement says "Greenland must embrace the opportunities for uranium mining" and I think this is exactly what they need to do. The economy of Greenland is very reliant on financial aid from the Danish Government. This aid makes up more than 25% of its total GDP and more than 50% of the total government revenue. Not only that, 84.9% of Greenland's major exports head to Denmark. In a country of only 57,000 people, developing these resources could have a big economic impact, leading towards ~~possible~~ possible full independence from Denmark.

Greenland minerals and energy (GME) are promoting the mines as a positive step towards

creating a new global green economy. According to the company 80% of the rare earth minerals available here are those commonly used in wind turbines and hybrid cars. Both of which have been created to minimise pollution. Locals are still not completely happy arguing the radioactive waste from the mining process would endanger fisheries and farmland within the region. In areas surrounding Narsaq, there are enough green fields to make sheep farming profitable.

Currently the ice sheet covers 80% of Greenland's area. As it melts it allows Greenland to become a more viable travel destination. Kakuja, a photographer, and others are concerned that encouraging tourists is only going to worsen the problem of climate change. Another says that tourism might just be the thing to get the world to take global warming more seriously.

In conclusion I believe that the mining in Greenland should go ahead. The positives strongly outweigh the negatives and could give Greenland a massive economic boost. Although there could be slight damage to the environment, everyone is working towards a cleaner more sustainable future.

Merit Exemplar 2018

Subject	Geography	Standard	91429	Total score	14
Q	Grade score	Annotation			
1	A4	This question does not reach M5 as the points about the influence of the natural environment on tourism could be better explained.			
2	M6	This response demonstrates an understanding of the arguments for and against mining, but the perspectives could be better exemplified for E7.			
3	A4	The pros and cons of uranium mining are discussed, but the recommendation is not fully justified. Greater exemplification would take this to an M5.			