

**DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)**

**HOME SCHOOLING SELF-STUDY WORKSHEET**

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| **SUBJECT** | Maritime Economics | **GRADE** | 12 | **DATE** | 23/4/20 |
| **TOPIC** | **MARINE ENVIRONMENTAL CHALLENGES**  | **TERM 1****REVISION** | X | **TERM 2 CONTENT** | X |
| **TIME ALLOCATION** | 30min | **TIPS TO KEEP HEALTHY**1. **WASH YOUR HANDS** thoroughly with soap and water for at least 20 seconds. Alternatively, use hand sanitizer with an alcohol content of at least 60%.2. **PRACTICE SOCIAL DISTANCING** – keep a distance of 1m away from other people.3. **PRACTISE GOOD RESPIRATORY HYGIENE**: cough or sneeze into your elbow or tissue and dispose of the tissue immediately after use.4. **TRY NOT TO TOUCH YOUR FACE.** The virus can be transferred from your hands to your nose, mouth and eyes. It can then enter your body and make you sick. 5. **STAY AT HOME.**  |
| **INSTRUCTIONS** | 1. This worksheet is to be completed in your MRTE exercise/activity book.2. Answer all the questions.  3. Read the questions carefully before answering.  4. It is in your own interest to write legibly and to present your work neatly.  5. When doing calculations, all working detail must be shown.  |

**QUESTION 6**

The new SA Agulhas II that was scheduled to enter service earlier this year is a modern and sophisticated vessel. Her role is to support the operations of the South African National Antarctic Expedition base where research about polar science, physical science, polar animals and plants occur, and the base also plays an important part in global weather forecasting. The ship is designed to carry supplies, personnel and researchers for the Antarctic base, as well as the bases on Marion and Gough islands. The island bases are used for biological, environmental and climate research.

Among the studies being undertaken at these bases is research into climate change.

The vessel has fourteen laboratories, eight of which are permanent fixtures aboard the ship, while six are containerised. The vessel also has a weather station that transmits continuous data back to the South African Weather Service, and the ship will also be used as a floating research base for observing marine life.

Because she has a range of functions, the ship is also classified as a tanker (she carries diesel to the various bases), cargoship, passenger ship, research vessel, helicopter carrier and icebreaker.

Because of strict rules governing emissions from ships in polar regions, she is equipped with scrubbers to reduce carbon emissions from her exhausts, while she has a purification plant to recycle water.

6.1 The ship cost R1.3 billion and is expected to have a life of 30 years. Give your opinion (with sound reasoning) on whether you think it is worth spending that amount of money on this ship. (10)

6.2 Draw a badge for this ship, based on her main function – to service the Antarctic and island bases. (10)

6.3 A typical weather report during a voyage from Cape Town to Antarctica is as follows:

POSITION 45 DEGREES 50 MINUTES SOUTH 02 DEGREES 12 MINUTES EAST WIND WESTERLY GALE FORCE GUSTING 45 TO 50 KNOTS SEA SWELL 5 METRES FROM THE WEST, REACHING 6 METRES FROM THE WEST RAIN HEAVY AT TIMES WITH SOME SNOW FLURRIES VISIBILITY POOR IN THE RAIN AND SNOW

6.3.1 What weather feature will cause these conditions? (2)

6.3.2 How will these conditions affect life aboard the ship? (6)

6.3.3 When the ship is in the ice, the sea is calm. Why is this? (2)

 [30]