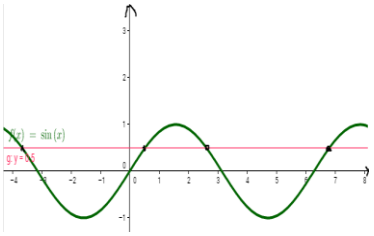
Week 2
Term 3
2021

HAWKER COLLEGE
Engage | Inspire | Achieve

Learning Brief
SM2

Goals



By the end of this unit, students:

- understand the concepts and techniques in trigonometry, real and complex numbers, and matrices
- apply reasoning skills and solve problems in trigonometry, real and complex numbers, and matrices
- communicate their arguments and strategies when solving problems
- construct proofs of results
- interpret mathematical information and ascertain the reasonableness of their solutions to problems

This week:

The basic trigonometric functions:

- graph functions with rules of the form $y = f(a(x - b))$ where f is one of sin, cos, or tan.

Theoretical Components

Read through examples and make notes.

Mathspace Lessons:

- Transformation of trig functions: https://bit.ly/3pW0SHn
- Graphing Sine Curves: https://bit.ly/3goYbeD
- Graphing Cosine Curves: https://bit.ly/35mqh3S
- Finding equations: https://bit.ly/3wwA6YY

Watch the following videos:

- https://goo.gl/3UZ3TX
- https://goo.gl/m32EH3
- https://goo.gl/7uvVjz
- https://goo.gl/YldAhZ

Notes:

- Step by step graphing: http://goo.gl/oQ27eE
- Examples: http://goo.gl/PeXSsM

Practical Components

Check Google Drive WK02 folder:

- Attempt at least 10 questions from each of the 2 exercises.

Investigation

A team of CSIRO biologists have discovered a new creature in the Black Mountain forest. They note the temperature of the animal appears to vary sinusoidally over time. A maximum temperature of 37 °C occurs 10 minutes after they start their examination. A minimum temperature of 31 °C occurs 26 minutes later. The team would like to find a way to predict the animal's temperature over time in minutes. Your task is to help them by creating a graph of one full period and an equation of temperature as a function over time in minutes.

(20 marks)

Q/F/O
Quiz/Forum/Other

More practice:

- http://goo.gl/h1gacw