**Week** 11/12
**Term** 2
**2019**

HAWKER COLLEGE
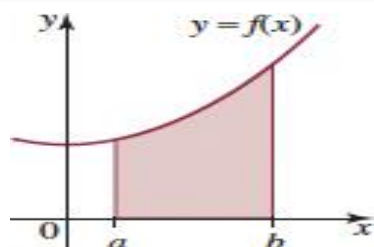Engage | Inspire | Achieve

**Learning Brief MM3: Integrals**

## Goals



By the end of this week, you should be able to:

• Understand the use of areas of rectangles (and other shapes) to approximate the area under a given curve between defined intervals
• Understand the use of sigma notation and limits to approximate area under a curve
• Find an exact area under a given curve using definite integrals

## Theoretical Components

JacPlus eBook *Year 12 Maths Quest Methods* (dark blue book) Chapter 9
Read and view worked examples 18 to 28

Watch these YouTube videos:
Approximating area under a curve using rectangles:

http://www.rootmath.org/calculus/area-intro

Exact area under the curve using definite integral:

http://www.youtube.com/watch?v=ODwkTt0RMDg&feature=relmfu

https://www.youtube.com/watch?v=GtCYrxxTjH4

https://www.khanacademy.org/math/ap-calculus-ab/fundamental-theorem-of-calculus-ab/fundamental-theorem-of-calculus-tut-ab/v/fundamental-theorem-of-calculus

## Practical Components

JacPlus eBook *Year 12 Maths Quest Methods* (dark blue book)

**Exercises 9D, 9E and 9F** (Do every 2nd or 3rd question i.e. 1a, c, e; 2a, c, f; 3 etc).

Use your CAS to integrate functions and to find definite integrals

## Investigation

Keep up to date with the practical work.

Complete Exercises 9D, 9E and 9F and show Jacqueline completed solutions for:
• Week 11 Exercise 9D Q9 (include sketch)
• Week 12 Exercise 9E Q 10 and Exercise 9F Q 12 (include sketch - use CAS to assist you with the sketches)

## QFO
Quiz/Forum/Other