Week 15/16
Term 04
2015

Learning Brief

MM2
Introductory and Differential Calculus

Goals

Unit Goals

- differentiate polynomial and simple rational functions;
- apply chain, product and quotient rules for finding derivatives;
- use the second derivative to investigate changes in concavity;
- use calculus to confirm critical features of the graphs of polynomial and simple rational functions;
- solve problems using differential calculus.

This Week

- Applications - related rates
- Revision

Theoretical Components

Resources:
Maths Methods Year 11 and Year 12
3 Unit Cambridge Year 11
Knowledge Checklist:

- what is a gradient function?
- what is the x-intercept of a gradient function?
- power rule
- Chain rule
- Product rule
- Quotient rule
- finding gradient functions by sketching
- finding gradient functions by rule
- finding gradient functions using your CAS
- curve components
- identify increasing curve
- identify decreasing curve
- find equations of tangents and normals
- identify and classify stationary points
- second derivative
- properties of the second derivative
- concavity
- identifying concavity
- sketching graphs
- solve problems using calculus
- solve maximising problems
- solve minimising problems
- what is a rate
- using calculus to solve rate problems
- explicitly use the chain rule to solve rate problems
- solve worded and contextual problems using calculus

Practical Components

Week 15
https://www.khanacademy.org/math/differential-calculus/derivative_applications/rates_of_change/v/rates-of-change-between-radius-and-area-of-circle

12 Methods Book
8E Question 1,2,4,14
8F Question 1,2,3,5

Week 16 Revision
You are required to complete:

- Monday lecture
- 1hr of face to face maths in learning commons
- Complete Week 14 QUIZ
- INVESTIGATION - prepare an A4 double sided, hand written summary sheet for the test
- Get all your investigations up to date and in a folder ready to hand in

Q/F/O

Catch up week.
Chance for you to reduce your absences. Show me your completed Investigations from before Week 12 and complete Week 14 Quiz, if you have not already done so.

Investigation

Week 15 – None. Catch up week.

Week 16
INVESTIGATION - prepare an A4 double sided, hand written summary sheet for the test. To be collected at the end of the exam – make sure you have your name on the sheet.