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| Subject  | Additional Mathematics Form 5 |
| Form  | 5 Al-Farabi |
| Date  | 27th February 2014 (Thursday) |
| Time  | 12.30 pm –1.00 pm (30 minutes) |
| Topic  | Chapter 3 : Integration |
| Sub-Topic | 3.1 : Integration as the reverse of differentiation3.2 : Area under a curve as the limit of a sum of areas |
| General Objective | 1. Understand the concept of integration as the reverse of differentiation
2. Understand and use the concept of definite integration to find area under graph
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| Specific Objectives | At the end of this lesson, students should be able to:1. Determine equation of curves from function of gradients
2. Find integrals of a where a is a constant and n is an integer and n ≠ 1
3. Determine areas under curves using formula
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| Lesson Content | 1. To determine integrals by reversing differentiation
2. To determine the equations of curves from functions of gradients
3. To calculate the integrals of definite integration
4. To find the area under a curve using definite integration
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| Reference | 1. Longman Essential Additional Mathematics SPM.
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| Inculcation of Values | Be systematic, Courage, Rational, Proactive |
| Teaching Materials | Whiteboard, Marker, Textbook, Worksheet |
| Procedures | 1. Set Induction | 1. Teacher recalls the previous lesson that is related to the topic that they are going to learn today.
2. Teacher introduces the new topic to the students and gives some briefing on that topic.
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| 2. Lesson Development | 1. Teacher explains that integration is the reverse process of differentiation.
2. To make it more clearer, teacher draws cycle of the reverse process and give an example as shown below :

differentiationintegration1. Teacher explains to the students that the subtopic that they are going to learn today is specific on definite integration.
2. Students are asked about the use of integration and why they have to study this topic.
3. Teacher tells the class that the integration is used to find the area under the graph.
4. Teacher draws a graph to show area under the curve.
5. Teacher shows how to find area under the curve using definite integrals of a where a is a constant and n is an integer and n ≠ 1.
6. Teacher shows an example of how to find area under a curve using definite integration formula.
7. Teacher gives examples of finding area using integration.

Example 1:Find the area of the shaded region in the diagram : **Solution:** Area =  =  =  =  =  = Example 2:Find the area of the region bounded by the curve and the x-axis. **Solution:**  =  Area = = = = 1. Teacher tests students’ understanding by asking them to do exercises in the worksheets given.
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| 3. Conclusion | Teacher summarizes today’s lesson on :1. The concept of definite integration
2. The concept of definite integral as the area under the graph
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| 4. Evaluation | 4.1 Teacher gives some exercises to gauge student’s level of understanding.4.2 Teacher asks students to do on the whiteboard. |  |
| Follow up Activities | Students are required to do some exercises taken from worksheet given and workbook as their homework. |
| Reflection |  |