Department of Mathematics, King Saud University

M-106: Integral Calculus

First Semester: 1438-39 H

Questions should be solved during Tutorials

<u>Book:</u> **Calculus by Swokowski, Olinick, Pence** (Sixth Edition)

Sections	Topic	Exercise
4.1.	Antiderivatives and Indefinite Integrals:	1,5,7,11,14,15,17,23,27,29,35,41,43,49.
4.2.	Change of Variables in Indefinite Integrals:	1,3,5,7,9,16,20,21,27,32,37.
4.3.	Summation Notation and Area:	1,2,3,5,6,9,12,27,37.
4.4	The Definite Integral:	1,5,10,11,15,16,19,20,31,33,37.
4.5	Properties of the Definite Integral:	7,10,11,12,15,17,22,23,25,29,34.
4.6.	The Fundamental Theorem of Calculus:	1,7,8,9,11,12,13,15,16,17,21,29,32,36,45,47.
4.7.	Numerical Integration:	15,16,17,18,33,34.
6.2.	The Natural Logarithm Function:	3,5,9,11,32,35,39,41,42.
6.3.	The Exponential Function:	1,3,6,11,15,31,33.
6.4.	Integration Using Natural Logarithm and Exponential Function:	1,3,6,11,15,18,19,30,31.
6.5	General Exponential and Logarithmic Functions:	1,5,15,17,23,29,37,39,39,41,42.
6.7	Inverse Trigonometric Functions:	31,33,37,43,51,52,56,57,60,61,62.
6.8	Hyperbolic and Inverse Hyperbolic Functions:	19,20,21,28,29,61,63,65,67,73, 74,75,79,80.
6.9	Indeterminate Forms and l'Hopital's Rule:	49,51,57,58,59,64,65,74,76.
7.1.	Integration by parts:	1,2,7,11,12,13,16,17,31.
7.2.	Trigonometric Integrals:	1,3,4,5,7,9,11,13,15.
7.3	Trigonometric Substitutions:	1,3, 5, 7, 9, 10; 21, 22.
7.4.	Integrals of Rational Functions (Partial fractions):	1,2,5,6,9,11,25.
7.5.	Quadratic Expressions and Miscellaneous Substitutions:	1,3,5,6,10,12,25,26,27,28,32,47,48,49,50.
7.7	Improper Integrals:	1,2,4,7,13,14,15,17.
5.1.	Area Between Curves:	5,6,9,10,11,12,14,27,28,31.
5.2.	Volume (By Disk or Washer):	5,6,8,9,21,25.
5.3.	Volume(By Cylindrical Shells):	5,6,7,11,13,15,17,19,21.
5.5	Arc Length and Surfaces of Revolution:	5,7,11,12,13,29,30,32,35,36,42.
9.1.	Parametric Equations:	1,3,5,7,25.
9.2	Arc Length and Surface Area:	1,5,7,9,21,23,29,31,33,35,37.
9.3.	Polar Coordinates:	1,2,3,5,7,9,27,31,33,37,38,51,53,59.
9.4	Integrals in Polar Coordinates:	1,3,18,19,22,23,27,30,35,37.