Department of Mathematics, King Saud University

M-106: Integral Calculus

First Semester: 1437-38H

**Questions should be solved during Tutorials**

**Book: 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. |