### ASSIGNMENT 01-PART 3 CHAPTER 5&6:

### Subject: MAE101

### Name of student:

1. Submit the exercises from 1 to 12 before Feb. 10, 2022 such that you is invited to represent solutions of at least 2 of the exercises in the class

2. Solve all exercises before the deadline.

Questions:

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|  | **Content** | **Answers by student** | |
| 1 | Write down Fundamental Theorem of Calculus, Part 1 |  | |
| 2 | Write down Fundamental Theorem of Calculus, Part 2 |  | |
| 3 | Write down Net Change Theorem. What is the meaning of the theorem |  | |
| 4 | Write down Mean Value Theorem and what is the meaning |  | |
| 5 | Write down formula of In tegration by Substition and find two examples (one for definite and one for indefinite) show how to apply the method. |  | |
| Review Exercises | |  |
| 6 |  |  | |
| 7 |  |  | |
| 8 | Evaluate the following integrals. |  | |
| 9 |  |  | |
| 10 |  |  | |
| 11 |  |  | |
| 12 |  |  | |
| Key concepts and properties | |  | |
| 17 | Write down formula of Integration by Part and find two examples (one for definite and one for indefinite) show how to apply the method. |  | |
| 18 | Write down all formulae of Trigonometric Integrals |  | |
| 19 | Write how to use Trigonometric Substitution and find one example. |  | |
| 20 | Write how to use Partial Fractions and find an example |  | |
| 21 | Write all formulae of approximation by midpoint rule, trapezoidal rule, and Simpson’s rule. Which one is the best? Find an example. |  | |
| 22 | Write down the formulae to compute two types of improper integrals. Find one example for each type. |  | |
| 23 |  |  | |
| 24 |  |  | |
| 25 |  |  | |
| 26 |  |  | |
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