### ASSIGNMENT 01-PART 1 CHAPTER 01 and 02: Functions and Limits

### Subject: MAE101

### Name of student:

1. Solve the exercises yourself and submit your solutions in LMS before deadlines (do not send via email).

2. Each student is required to represent solutions of at least 2 of the exercises in lecture classes or TA classes.

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| ***Exercises*** | ***Review key concepts*** | ***Solutions/Anwsers*** |
| **1-6.** | ***List of all basic classes of functions (Definition/Formulae; Domain/Range; Grapth; Properties,…).*** |  |
| ***1. Linear function*** |  |
| ***2. Polynomials (quadratic, cubic,…)*** |  |
| ***3. Power functions*** |  |
| ***4. Trigonometric functions*** |  |
| ***5. Exponential functions*** |  |
| ***6. Logarithmic functions*** |  |
| **7** | ***7. State all limit laws and give one example for each limit law*** |  |
| 8 | **4**. Determine whether the curve is the graph of a function of x.  If it is, state the domain and range of the function. |  |
| 9-11 |  |  |
| 12-14 |  |  |
| 15-16 | **4**.    **12**. Guess the value of the limit (if it exists) by evaluating the function at the given numbers (correct to six decimal places). |  |
| 17-21 | **11-24**. Evaluate the limit, if it exists.      **30**.    **34**. Find the limit, if it exists. If the limit does not exist, explain why. |  |
| 22 |  |  |
| 23-24 |  |  |
| 25-28 |  |  |
| 29 | **38**. Find a formula for a function that has vertical asymptotes x = 1 and x = 3 and horizontal asymptote y = 1. |  |