

# Informations about the 1st Midterm Test Calculus (for Physicist-Engineers)

**Date:** October 27, 2023., 2-4 p.m

**Location:** F2E

In the Midterm Test, tasks similar to the exercises taken in the practical course must be solved. The use of any aids (calculator, phone, book, notes, etc) is not allowed. Please bring A4 size sheets with you. The test must be written with a pen. **To pass, at least 40% of the points must be achieved.** The exercises of the test cover the following topics:

## 1. **Review of Functions**

<sup>1</sup> Section 1, pp 1-55.; Week 1.,2.,3. (Practise Course Exercises)<sup>2</sup>

Domain, Range, Symmetry, Transformations of functions and Graphs, Composite functions, Inverse functions, Exponential and logarithmic functions, Trigonometric functions and their inverses

## 2. **Limits**

Section 2.1-2.5., pp 56-102., Section 2.7. pp 108-130.; Week 4.,5.,6. (Practise Course Exercises)

Limits by definitions, Techniques for computing limits, Squeeze rule, Trigonometric limits, One-sided limits, Infinite limits, Limits at infinity, Asymptotes (horizontal, vertical and slant)

## 3. **Continuity**

Section 2.6., pp 103-115.; Week 6. (Practise Course Exercises)

Continuity at a given point, continuity on an interval, Classification of discontinuities (removable, jump, infinite), continuous extension of a function

We wish you a successful preparation!

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<sup>1</sup>Briggs et al, Calculus - Early Transcendentals

<sup>2</sup><http://math.bme.hu/~pitrik/>