

Informations about the 2nd Midterm Test

Calculus (for Physicist-Engineers)

Date: November 27, 2023., 8-10 a.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. **Intermediate value theorem**

¹ Section 2.7, pp 110-115.; Week 7. (Practise Course Exercises)²

2. **Derivatives**

Section 3, pp 131-236.; Week 7.,8., 9. (Practise Course Exercises)

Definition of derivative, Rules of differentiation. Tangent lines. Logarithmic differentiation. Implicit differentiation. Derivatives of inverse functions, derivative of arcus functions.

3. **Applications of the Derivatives**

Section 4.1.,4.2, 4.3 pp 241-271.; Week 9. (Practise Course Exercises)

Mean value theorems(Rolle, Lagrange, Cauchy). Maxima and minima. Increasing and decreasing functions. Convexity, concavity.

We wish you a successful preparation!

¹Briggs et al, Calculus - Early Transcendentals

²<http://math.bme.hu/~pitrik/>