Week: March 30 – April 5, 2020
Topic: **Applications** of double and triple integral

The below provided instructions should guide you through studying the topic. For additional explanation, clarification and extra material contact the Lecture/Tutorial teacher by email or the MS-Teams platform for live online consultation (see webpage for the link).
https://mat.nipax.cz/mathematics:mathematics_ii

This week the goal is to finish everything concerning the double and triple integrals, including their transformation and various applications. Next week we will enter the last part of the semester, where the line and surface integrals will be studied. *Please make sure you understood everything from the differential calculus and from the double and triple integral. In case you need to explain or practice more some part, please let us know.*

1) Read and learn the explanation from the textbook. Scanned pages can be found on the web page.
https://mat.nipax.cz/_media/mathematics:pages_48-57.pdf
https://mat.nipax.cz/_media/mathematics:pages_56-69.pdf
These parts of the textbook contain all the necessary information and explanation including the transformations in 2D and 3D. Also the applications are explained separately for double and triple integral at the end of the respective chapters.

Additional material and alternative explanation with many figures and exercises can be found in (free) online available textbooks
http://www.math.wisc.edu/~keisler/calc.html
namely chapter 12 http://www.math.wisc.edu/~keisler/chapter_12.pdf

https://openstax.org/books/calculus-volume-3/pages/1-introduction
namely chapter 5 https://openstax.org/books/calculus-volume-3/pages/5-introduction

2) Take a look at the solved exercises from our collection of examples
questions: https://mat.nipax.cz/_media/double_integral.pdf
https://mat.nipax.cz/_media/triple_integral.pdf
complete solutions (in Czech): https://mat.nipax.cz/_media/dvojny_intregral.pdf
https://mat.nipax.cz/_media/trojny_integral.pdf

3) As a training solve (at least) the following exercises.
308, 317, 327 – applications of double integral
406, 413, 417 – applications of triple integral

4) As a long term homework, to be delivered at your return to the school (at latest at the end of semester, prior getting the assessment from tutorials), make sure you have solved **all the exercises 1., 2., 3., 4. from all three sample exams (both A and B levels)** from our webpage.
https://mat.nipax.cz/_media/mathematics:ma2_exam_1_en.pdf
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