

Math2310 - Fall '22

Syllabus - Lecture 16

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Review

1 Integrals over multivariable domains

- Examples and motivation.

Topics

1 Integrals and Fubini

- Integrals over rectangular domains
- Fubini's theorem
- Integrals over general domains: definition
- Riemann sums and error estimates
- Properties of integrals: linearity, positivity, additivity w.r.t disjoint domains
- Integration techniques:
 - Describing regions and exchanging order of integration
 - Splitting regions

References

Textbook

- [Ste] Chap 15.1 (complete) - Double integrals over rectangles
- [Ste] Chap 15.2 (complete) - Double integrals general regions

Videos

- [Defining Double Integration with Riemann Sums | Volume under a Surface - YouTube](#)