VECTOR CALCULUS
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Lesson 0407
Tuesday, April 7, 2020

We now begin the somewhat daunting task of coming to grips with why Green's Theorem is true. There are two aspects to this; one is to understand the computational proof, as presented in the book and elsewhere. The second, and more important aspect, is to grasp the conceptual aspect, that flux on the boundary is the "sum" (i.e. integral) of the divergence (flux density) of the inside. I plan to try to make a video to explain my perspective of this second aspect, wish me luck!

For today, your assignment is:

- Read Thomas's "Proof of Green's Theorem for Special Regions", pages 1175 to 1176, up to "Extending the Proof to Other Regions".
- Watch this Kahn Academy video:

  Kahn Academy Proof of Green's Theorem Part 1

- Mrs. Bailey has notes on this she would like to share, they are in `VVectx0407-Marizza.pdf`. She has extended Thomas's book with her own helpful commentary; have a look at that.
- After you have done these things, fill out today's checkin:

  0407 Vector Calculus Checkin

I will send out an invite for an optional class meeting at 11 AM on Wednesday. This is an opportunity for us to use a digital whiteboard to go over material.