Math 53 (Multivariable Calculus), Section 102 & 108
Week 12, Wednesday
Nov 9, 2022
For the other materials: seewoo5.github.io/teaching/2022Fall

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1. Use Green's theorem to evaluate the line integral along given positively oriented curve.
   (a) $\int_C y^4 dx + 2xy^3 dy$, C is the ellipse $x^2 + 2y^2 = 2$.
   (b) $\int_C (e^{-x} + y^2)dx + (e^{-y} + x^2)dy$, C consists of the arc of the curve $y = \cos x$ from $(-\pi/2, 0)$ to $(\pi/2, 0)$ and the line segment from $(\pi/2, 0)$ to $(-\pi/2, 0)$.
2. Let D be a region bounded by a simple closed path C. If D has area 3, what is the value of $\int_C (\sin x + 7y)dx + (e^y + 10x)dy$?