Math 53 (Multivariable Calculus), Section 102 & 108
Week 2, Monday
Aug 29, 2022
For the other materials: seewoo5.github.io/teaching/2022Fall

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1. Find dy/dx for a curve parametrized by $x = 1/(1+t), y = \sqrt{1+t}$ (for $t > -1$).
2. Consider an ellipse parametrized as $x = 2\cos t, y = \sin t$.
   (a) Eliminate t to find an equation in x and y.
   (b) Find dy/dx. Can you express it without t (only in x and y)?
   (c) Find the tangent line at $t = \pi/3$.
3. Find dy/dx for a curve parametrized by $x = \sin t \cos t, y = \sin^2 t$. Also, find the points where the tangent line is horizontal or vertical. (Hint: use the double angle formula.)