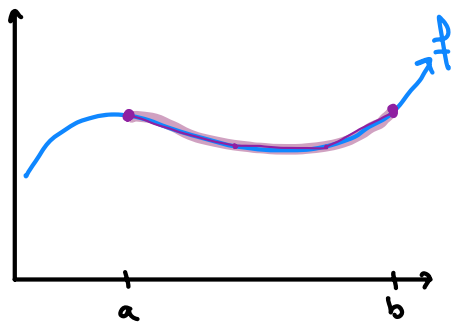
MATH 122

LENGTH OF A PLANE CURVE (ARC LENGTH)

GOALS

- ☐ KNOW AND UNDERSTAND THE FORMULA FOR THE LENGTH OF A PLANE CURVE
- ☐ KNOW THE COMMON "TRICKS" THAT COME UP W/ ARC LENGTH PROBLEMS



Ex: $y = x^2$; $[0, 2]$

Ex: $y = \frac{2}{3}(x^2-1)^{3/2}$; $[1,3]$

Ex: $y = \frac{x^2}{2} - \frac{\ln x}{4}$; $[2,4]$

Ex: $F(x) = \int_1^x \sqrt{t^4 - 1}\, dt$; $[1,2]$

Ex: $x^2 = 9y^3$; FROM $(0,0)$ TO $(81,9)$